100/300 AREA UNIT MANAGER MEETING
ATTENDANCE AND DISTRIBUTION
January 8, 2009

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100/300 AREA UNIT MANAGERS MEETING
APPROVAL OF MEETING MINUTES
January 8, 2009

APPROVAL: _____ Date 2/12/09
Mark French, DOE/RL (A3-04)
River Corridor Project Manager

APPROVAL: _____ Date 2-12-09
Briant Charboneau, DOE/RL (A6-33)
Groundwater Project Manager

APPROVAL: John B. Price Date 2-12-2009
John Price, Ecology (H0-57)
Environmental Restoration Project
Manager

APPROVAL: _____ Date 2/12/09
Larry Gadbois, Rod Lobos, Laura Buelow,
or Craig Cameron EPA (B1-46)
100 Aggregate Area Unit Manager

APPROVAL: Larry Gadbois Date 2-12-2009
Larry Gadbois or Dave Einan, EPA
(B1-46)
300 Aggregate Area Unit Manager

100 & 300 AREA UNIT MANAGER MEETING MINUTES

Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); and Mission Completion

January 8, 2009

ADMINISTRATIVE

- Next Unit Manager Meeting (UMM) - The next meeting will be held February 12, 2009 at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209. The December 2008 UMM was cancelled.
- Attendees/Delegations - Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM. Attachment B documents any delegations received from the agencies.
- Approval of Minutes – The November 2008 meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- Action Item Status - Status of action items was performed, and updates provided (Attachment C).
- Agenda: Attachment D is the meeting agenda.

EXECUTIVE SESSION (Tri-Parties Only)

No issues were identified, no agreements were documented, and no action items were documented.

100-F & 100-IU-2/100-IU-6 AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. No issues were identified, and no action items were documented.

Agreement: Attachment 2 (TPA-CN-241) documents approval by DOE and EPA for changes to the 100-FR-3 Operable Unit Sampling and Analysis Plan, DOE/RL-2003-49, Rev. 1 and TPA-CN-228 (July 14, 2008). In summary, the sampling frequency for five wells changed from annual to biennial; and one well added strontium-90 as a parameter.

100-D & 100-H AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. Attachments 3 and 4 are maps outlining a status or information for soil remediation at various waste sites in 100-D and 100-H. No issues were identified, no agreements were documented, and no actions were documented.

100-K AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. No issues were identified, no agreements were documented, and no actions items were identified.

100-N AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. Attachment 5 provides a status or information for D4/ISS. No issues were identified, no agreements were documented, and no action items were documented.

100-B/C AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. No issues were identified, and no action items were documented.

Agreement: Attachment 6 (TPA-CN-240) documents approval by DOE and EPA for changes to the 100-BC-5 Operable Unit Sampling and Analysis Plan, DOE/RL-2003-38, Rev. 1 and TPA-CN-182 (September 6, 2007). In summary, the sampling changes involve removing several wells from the monitoring network, modifying the sample frequency at various wells, and modifying the sampling parameters at various wells.

300 AREA – 618/10/11 (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. No issues were identified, no agreements were documented, and no action items were documented.

300 AREA - GENERAL (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides a status or information for groundwater. Attachment 7 provides a status or information for D4/ISS. No issues were identified, no agreements were documented, and no action items were documented.

REGULATORY CLOSEOUT DCOUMENTS OVERALL SCHEDULE

Attachment 8 provides a status or information. No issues were identified, no agreements were documented, and no action items were documented.

MISSION COMPLETION PROJECT

Attachment 9 provides a status or information regarding the orphan sites evaluation, River Corridor Baseline Risk Assessment, and the Remedial Investigation of Hanford Releases to the Columbia River. No issues were identified, and no action items were documented.

Agreement: Attachment 10 (narrative), Attachment 11 (excel table with proposed sampling changes), and Attachment 12 (maps showing location of sampling points in Attachment 11) are proposed changes to the *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River*, DOE/RL-2008-11, Rev. 0. RL, EPA, and Ecology approve the proposed changes as outlined in these three attachments.

5-YEAR RECORD OF DECISION ACTION ITEM UPDATE

An updated action item list will be provided at the next UMM. No issues were identified, no agreements were documented, and no action items were documented.

Attachment A

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Attachment B

Attachment C

100/300 Area UMM
Action List
January 8, 2009

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	300-008	RL	T. Post	100/300 Area	RL shall develop the instructions for documenting D4 completions in the 100 and 300 Areas where no known waste site is under the building, and no releases to soil are documented or expected based on existing data. These instructions shall be added into the respective Removal Action Work Plans after review and approval from the respective lead regulatory agency for the specific Removal Action Work Plans in the 100 and 300 Areas.	Open: 4/12/07; Action: Ongoing action, and are still under development. Instructions are developed and is complete for the 300 Area. RL will submit a TPA Section 9.0 document change notice for the 100 Area. Agencies submitted comments; item closed at 01/08/09 UMM.
O	100-149	RL	J. Hanson	100-H	RL will review the extraction network for the 100-H pump and treat system, and provide recommendations to Ecology for optimization+F40.	Open: 1/10/08; Action: At the 8/14/08 UMM, additional discussions with Ecology are necessary on the 100-HR-3 optimization, as well as the long-term remedial alternatives. RL and Ecology met on 10/2/08, and a subsequent meeting is scheduled for 10/17/08. Item remains open.

100/300 Area UMM
Action List
January 8, 2009

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	300-009	RL	M. French	300 Area	RL shall brief EPA and Ecology on alternative exposure scenarios for the 300 Area.	Open: 1/10/08; Action: RL met with EPA, and based on input received, RL will provide an update after further internal discussion. Ecology plans to submit a letter and comments to RL. Item closed at 01/01/09 UMM.
X	100-164	RL	T. Post	100-D	RL shall meet with Ecology to discuss options and path-forward for waste sites 100-D-31, 100-D-63, 100-D-73, and 100-D-77.	Open: 8/14/08; Action: RL stated a meeting is scheduled for the week of 9/15/08. Item was closed at 01/08/09 UMM.
O	100-165	ECY	J. Price	General	Ecology shall schedule a meeting with RL following a review of the well variances provided by RL as prescribed in Action Item 100-158.	Open: 9/11/08; Action: Discussions between RL and Ecology continue. Ecology plans to send a letter.
O	100-166	RL	J. Hanson	General	RL shall schedule a meeting to discuss Ecology's comments on the Calendar Year (CY) 2007 100 Area Pump and Treat Report.	Open: 9/11/08; Action: Discussions between RL and Ecology continue.

100/300 Area UMM
Action List
January 8, 2009

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	100-167	RL	J. Hanson	100-H	RL and various contractors shall meet to discuss and assess waste sites upgradient of one specific well in the 100-H Area, and the groundwater monitoring data.	Open: 9/11/08; Action: RL has completed its review, and plans to share data with Ecology. Item closed at 01/08/09 UMM.
X	100-168	RL	M. French	100-K	RL shall provide EPA with the 118-K-1 burial ground remediation schedule to meet 2012.	Open: 9/11/08; Action: RL still owes EPA the schedule. K basin negotiations are dealing with this item. Item closed at 01/08/09 UMM.
X	100-169	RL	M. French	100-B/C	RL shall provide EPA with the schedule for strategy approach for 100-C-7 by September 30, 2008, as well as the remediation schedule for the remaining waste sites by the next UMM.	Open: 9/11/08; Action: Schedules were provided, and this item was closed at the 11/13/08 UMM.
X	100-170	RL	M. French	General	RL shall provide EPA with a copy of the other IC assessments performed this year across the Hanford Site.	Open: 9/11/08; Action: EPA and RL discussed. Item closed at 01/08/09 UMM.

Attachment D

100/300 Area Unit Manager Meeting
January 8, 2009
Washington Closure Hanford Building
2620 Fermi Avenue, Richland, WA 99354
Room C209; 1:00-4:30 p.m.

1:00 - 1:30 p.m. **Executive Session (Tri-Parties Only):**

- None

1:30 p.m. - 1:50 p.m. **Administrative:**

- Approval and signing of previous meeting minutes (November 2008)
- Note: December 2008 meeting was cancelled.
- Update to Action Items List
- Next UMM (2/12/2009, Room C209)

1:50 - 4: 00 p.m. **Open Session: Project Area Updates - Groundwater, Field Remediation, D4/ISS:**

- 100-F & 100-IU-2/6 Areas (Greg Sinton/Chris Smith)
- 100-D & 100-H Areas (Jim Hanson/Tom Post/Joanne Chance)
- 100-K Area (Jim Hanson)
- 100-N Area (Joanne Chance, Rudy Guercia, Mike Thompson)
- 100-B/C Area (Greg Sinton, Chris Smith)
- 300 Area - 618-10/11 exclusively (Chris Smith)
- 300 Area (Mike Thompson/Chris Smith/Rudy Guercia)
- Regulatory Closeout Documents Overall Schedule (Chris Smith)
- Mission Completion Project (Jamie Zeisloft/John Sands)

4:00 - 4:15 p.m. **Special Topics/Other**

- 5-Year Record of Decision Action Item Update (Jim Hanson)

4:15 - 4:30 p.m. **Adjourn**

Attachment 1

(1)

100/300 Areas Unit Managers Meeting,
January 8, 2009

100-FR-3 Operable Unit—Bill Barrett

Most of the wells in the 100-F Area were sampled in November to early December. Sampling of three wells was delayed: well 199-F6-1 could not be sampled because the road was not accessible, and wells 699-60-32 and 699-62-31 require electrical maintenance.

New well 199-F8-7 was sampled in early November. Data are not yet in HEIS; preliminary results for several constituents of interest are listed below. This well will be sampled quarterly during FY 2009.

Preliminary data for well 199-F8-7, Nov. 9, 2008

Sr-90:	6.43 pCi/L
Tritium:	2,340 pCi/L
Nitrate (as N):	25.1 mg/L
Total Cr:	<10 ug/L
Uranium:	9.73 ug/L
TCE:	<1 ug/L (other VOA non-detected too)

In December, EPA and RL signed TPA-CN-241, which modifies the groundwater sampling and analysis plan. Impact of change is that sampling frequency of five wells decreases from annual to biennial; added Sr-90 to one well. Aquifer tubes are removed from the SAP and are instead included in a separate SAP for aquifer tubes for the entire Hanford Site. The changes in this change notice will take effect in FY 2010, because the FY 2009 sampling has already occurred.

100-HR-3 Groundwater OU - Dave Shrimpton

- HR-3 Treatment System
  - For the period November 1 to 30, 2008:
    - The system operated normally. However, it has been shut down since December 16 due to exceptionally cold weather and cannot be restarted until we get a period of weather above freezing.
    - Total average flow through the system was 145.5 gpm, 54 gpm from D Area and 64.5 gpm from H Area. Extraction well 199-H4-4 was out of service for 17 days due to low river level. It is operated intermittently when water levels are high enough.
    - Average influent hexavalent chromium concentration for H Area was approximately 20 ug/L.
    - Average influent hexavalent chromium concentration for D Area was approximately 163 ug/L.

- DR-5 Treatment Status
  - For the period November 1 to 30, 2008:
    - The system operated normally.
    - Total average flow through the system was approximately 36 gpm.

  - The average influent hexavalent chromium concentration was approximately 685 ug/L.

- DR-5 Optimization status: In accordance with the agreement reached at the IAMIT on October 16, 2008, discharge to the ISRM Pond will cease by January 31, 2009. Plant modifications required to accomplish this are essentially complete and recycle of 10% of the discharge commenced in the week of January 5. Next week, 50% of the filtrate and rinsate from resin regeneration will be returned to the IX system influent tank, followed by 100% recycle. Plans to blend it into the effluent stream and send it directly to the injection well are under review.
  Also as agreed to at the IAMIT, plans are being made to empty the ISRM Pond and apply fixative by September 30, 2009; and to dismantle the pond by December 31, 2011.

- Remediation Process Optimization (RPO)
  - The scope of the RPO effort has been expanded from 100-D Area to the entire 100-HR-3 OU, since both D and H Areas are clearly integrated. The focus in November was on modeling for Phase I implementation (2012 river protection goal) with a secondary focus on Phase II modeling (2020 plume remediation goal). Results of this effort were reported to Ecology and EPA on December 11. Briefly, the Phase I RPO project will utilize both existing and new wells (33 total) to influence hydraulic gradients and protect the river. The existing HR-3 P&T system will be expanded, and a new P&T system in D Area will be built. Phase II RPO may require additional wells. Proposed new well locations were discussed with the Cultural Resource Board on December 17.
  - As a result of the December 11 presentation to Ecology on proposed well locations, RL/CHPRC has been working to develop a TPA change form to locate the new wells; initiate cultural review; stake the well locations; and provide a display of particle tracks to Ecology. This information will be submitted to Ecology in January with a request for concurrence/acceptance at the February UMM.
  - The DX project, which includes addressing the D Area hot spot and HR-3 capacity utilization, was kicked off December 11.
  - Technical Memoranda on the Well Field Design and Ex Situ Treatment options are being prepared.
  - The Technical Memorandum on Technologies and Alternatives is being accelerated to support the FFS/PP for the 100 Areas to allow bio- or chemical in situ treatment of both vadose zone and groundwater.
  - Engineering is finalizing a resin test plan for the purpose of optimizing resins at the existing pump and treat system and providing information on resin selection to the RPO team. The fabrication of a resin test skid was awarded in October, with delivery planned for January 2009.

- Horn Investigation
  - DOE/RL-2008-02, Decisional Draft, *Hydrogeological Summary Report for the 600 Area Between 100-D and 100-H for the 100-HR-3 Groundwater Operable Unit*, has been transmitted to DOE/RL for review. Project continues to monitor water level and conduct quarterly sampling.

- Deep Chromium Investigation
  - This investigation was kicked off in October to fulfill a CERCLA 5-Year Review Action. Proposed well locations and sampling/analysis strategy were discussed with RL and will be discussed with Ecology in January.

- IAMP Review
  - A review of the IAMP was kicked off in October to bring it up to date and consistent with the RD/RA Work Plan. It is intended to issue supplements to these documents until they are superseded by the RD/RA Work Plan implementing the final ROD.

- EM-22 Technology Projects
  - Investigation for mending ISRM Barrier: Wells around 199-D4-26, which was injected with 2400 kg of nanometer-size zero valent iron in August, are being monitored. Hexavalent chromium analyses are compromised because of the iron staining the groundwater samples, so PNNL is developing an alternative analysis technique for these samples.
  - 100-D Southern Plume Investigation: A draft report on the southern plume chromium source investigation in 100-D was submitted to DOE/RL in September.
  - 100-D Northern Plume Investigation: Drilling of three groundwater monitoring wells was completed in October. Vadose zone characterization using the Hydraulic Hammer Rig is expected to begin early this month.
  - In situ Biostimulation: Monitoring of the molasses-injected region shows conditions are still strongly reducing. The area influenced by the emulsified vegetable oil is also reducing. A paper discussing these tests will be presented at the Waste Management Symposium in March.

- RI/FS Work Plan
  The RI/FS Work Plan Volume I (100 Area) and Addendum I (100-D/H Decision Unit), both Decisional Draft A, were submitted to DOE/RL for review in September. Extensive comments have been dispositioned and Decisional Draft B will be delivered to RL on January 15.

100-KR-4 Groundwater OU - Julie Robertson

- Monthly monitoring of cultural resources for 100-KR-4 was performed on November 21, 2008. No problems were observed. The monthly monitoring for December 2008 was cancelled due to extreme cold weather and snow cover.

- K Area RI/FS Work Plan
  - The K Area Decisional Draft A Addendum of the Integrated 100 Area RI/FS Work Plan is being readied for RL review, which is scheduled to begin at the end of this month (January).

- KR4 Treatment System
  - For the period of November 1-30, 2008:

- System operated normally during November but at reduced flow due to mechanical and communications issues associated with the injection wells. Early in the month there were intermittent facility outages due to injection well high water level alarms associated with work on the transducers. Additionally, extraction well 199-K-129 is experiencing seasonal low flow and intermittent outages due to low river levels.
- Total average flow through the system was approximately 224 gpm.
- Volume-weighted average influent hexavalent chromium concentration was 35 µg/L.

- KX Treatment System
  - Final acceptance testing activities are being completed, and preparation for turn-over to Operations for operational testing is underway. The facility is treating approximately 375 gpm extracted groundwater. Injection well 199-K-143 is out of service as a result of damage associated with cold weather (freezing). Blanks are installed in the lines extending from extraction well 199-K-144 (elevated tritium) and to injection well 199-K-171 (elevated hexavalent chromium).
  - November 18, 2008 sampling at well 199-K-157 indicates the presence of tritium at 320,000 pCi/L, which is down from the ~620,000 pCi/L seen in May and September.

- KX/KR4 Well Realignment
  - The proposal for Phase 1 well realignment was presented to EPA and informally approved for construction. The realignment will connect three current monitoring wells to the KX system as extraction wells (199-K-141, 199-K-154, and 199-K-163) to boost the flow of contaminated groundwater through the system. A TPA change notice is being drafted to identify the change in the well network, well flow rates, and well sampling requirements. The change notice will also document the reclassification of 199-K-144 and 199-K-171 as performance wells.

- KW Treatment System
  - KW remediation treatment status for the period of November 1-30, 2008:
    - System operated normally.
    - Total average flow through the system was approximately 98 gpm.
    - Average influent hexavalent chromium concentration was 60 µg/L.

- KW Expansion
  - A contract is in place for construction of the expansion from 100 gpm to 200 gpm treatment capacity. Design media are being developed and released to work. The proposed alignment of injection and extraction wells was presented to EPA and informally approved. The revised KW RDR/RAWP is in RL review and is anticipated to be ready for EPA review beginning January 22, 2009.

100-KR-4: K-Basins Monitoring Task—Duane Horton

- Leak Detection Monitoring Results:

- The most recent monthly sampling of wells close to the KE Basin was done in December 2008. Well 199-K-29 was not sampled as scheduled because the well is in an area of D&D activities and could not be accessed.
- The latest available monthly results for tritium are from December; all results are similar to recent historical results. Gross alpha and gross beta results from the December sampling are not yet available.
- There is no indication of groundwater impacts attributable to the KE or KW basins.

- Monitoring Well Network:
  - The most recent routine quarterly sampling of K-Basins monitoring network wells took place in October 2008. Some but not all results were available in December 2008.
  - With two exceptions, the available results from October 2008 are similar to recent historical data. The exceptions are an increase in carbon-14 in well 199-K-107A from 198 pCi/L in October 2007 to 302 pCi/L in October 2008 and a decrease in carbon-14 in well 199-K-106A from 6,740 pCi/L in April 2008 to 2,860 pCi/L in October 2008.
  - From the available October 2008 results, three wells exceeded the drinking water standard for carbon-14, one well exceeded the standard for tritium, two wells exceeded the standard for nitrate, one well exceeded the standard for chromium, and one well exceeded the standard for strontium-90.
  - The next routine quarterly sampling of K-Basins network wells is scheduled for January 2009 and is coordinated with the monthly sampling event.

- Reporting:
  - The most recent quarterly, RCRA groundwater report was for April through June 2008 (SGW-39325).
  - The July through September 2008 quarterly report is in preparation.
  - The fiscal year 2007 annual groundwater report (DOE/RL-2008-01) is available at http://www.hanford.gov/cp/gpp/library/gwrep07.

  Comments are being incorporated from the internal review of the fiscal year 2008 annual groundwater report (DOE/RL-2008-66) prior to going to external review. The anticipated release date for the report is March 1, 2009.

100-NR-2 Groundwater OU – Bill Barrett

- Apatite Barrier
  - Bimonthly performance monitoring/sampling per requirements in the test plan (DOE/RL-2005-96) occurred on October 29 and 30 and December 3 and 8, and will continue through the winter and into next spring. All eight aquifer tubes and twenty-nine barrier and monitoring wells completed in the Ringold Formation were sampled in both October and December, for a total of 37 of the 45 possible sampling points. The eight monitoring wells completed in the Hanford Formation were unable to be sampled due to very low river levels; these wells do not have water in them at low river stage. The next sampling event is tentatively scheduled for the first week in February, weather permitting.

- Sample results for October were not available as of January 6, 2009, but some sample results from December are available. More results might be available by the January 8, 2009 meeting, so handouts will be distributed at that time.

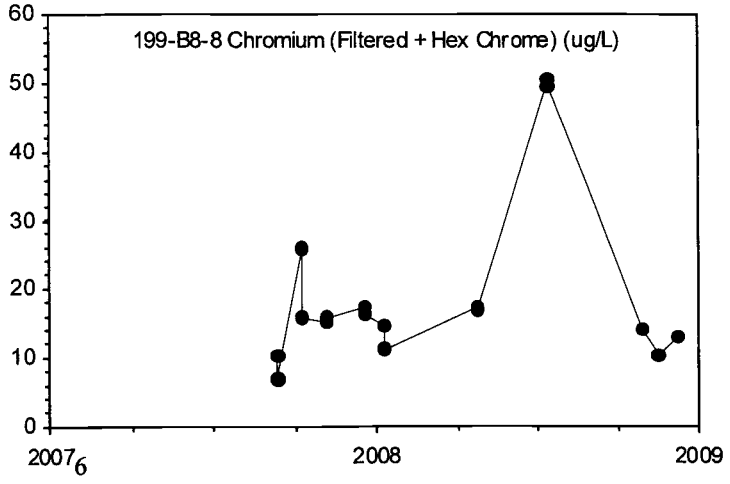
- Phyto remediation contract releases have been issued to PNNL, research work to continue.

- Total Petroleum Hydrocarbon Investigation
  - The Sampling and Analysis Plan (SAP) and Sampling Authorization Forms (SAFs) are issued and characterization work will be initiated in the very near future. This includes installation of a well (with sampling during drilling) at a site approximately 120 m SW (upriver) from the Apatite Barrier.

100-BC-5 Operable Units—Bill Barrett

In December, EPA and RL signed TPA-CN-240, which modifies the groundwater sampling and analysis plan. Impacts of change include: sampling frequency of one well (199-B8-8) increases from quarterly to monthly; two wells increase from biennial to annual; three wells decrease from annual to biennial; two wells in 600 Area eliminated from the network. Also some changes to constituents. Aquifer tubes are removed from the SAP and are instead included in a separate SAP for aquifer tubes for the entire Hanford Site.

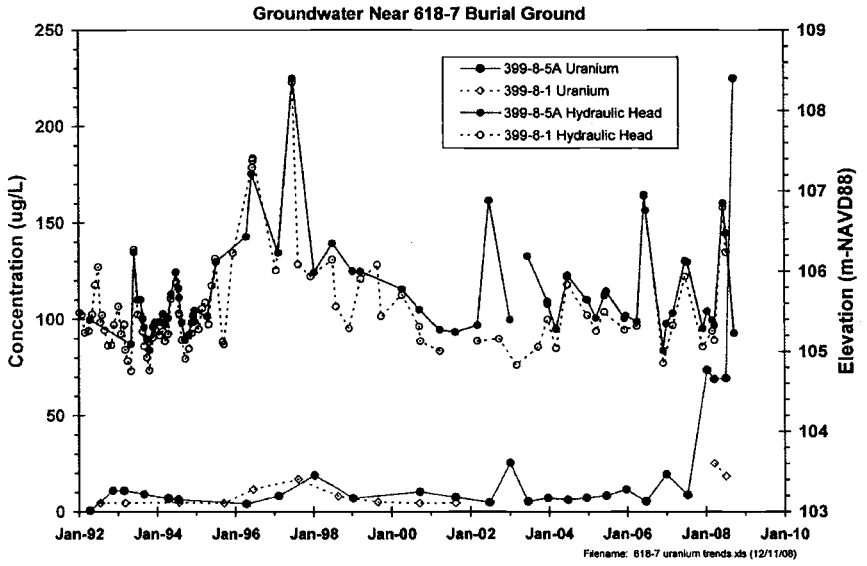
Well 199-B8-8 was sampled in October, November, and December 2008. The relatively high chromium value from July 2008 has not been repeated.



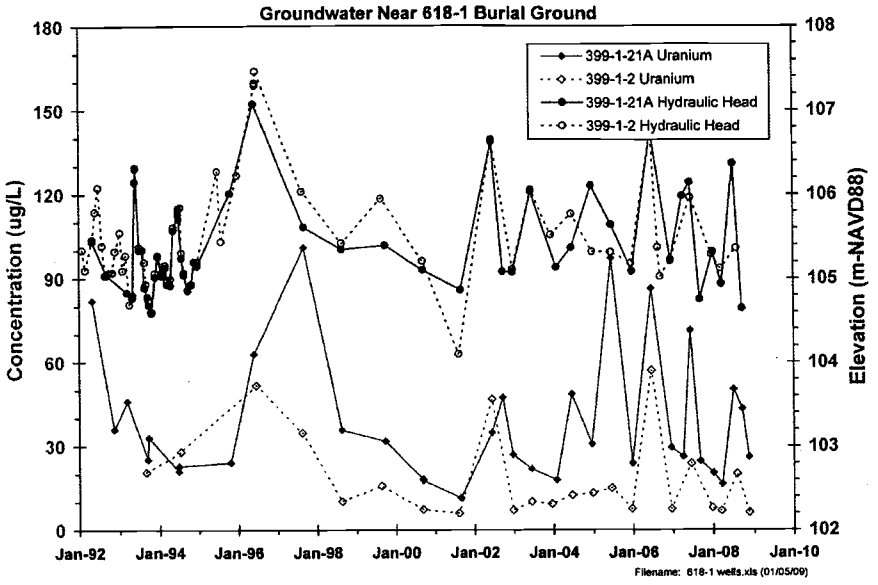
Other wells in the OU are scheduled for sampling in January under the new change notice.

300-FF-5 Operable Unit—Jane Borghese/Bob Peterson

- Operations and Maintenance Plan Activities
  - *300 Area Subregion:* Uranium results for the June sampling event have been evaluated and a plume map has been prepared. Estimates have been calculated for the plume's area (0.5 km^2), groundwater volume (1,293,490 m^3), and mass of uranium (61 kg). Concentration patterns are as expected, with higher values inland near former waste sites and lower values near the river because of mixing between groundwater and river water.
  - *618-7 Burial Ground:* No new analytical results since the last Unit Manager Meeting for monitoring conducted immediately downgradient from the burial ground remedial action site.



  - *618-1 Burial Ground:* Results for November sampling at two wells downgradient of the burial ground do not suggest changes in groundwater conditions that might be related to remedial actions.



- *618-11 Burial Ground Subregion:* No new information since the last Unit Manager Meeting. Most recent analytical results are for samples collected during late September. Tritium results are consistent with long-term trends, i.e., generally decreasing near the burial ground, with increases noted at some downgradient wells as the plume continues to migrate eastward.
- *618-10 Burial Ground Subregion:* No new information since the last Unit Manager Meeting. Most recent analytical results are for samples collected in late summer/early fall. Uranium and tributyl phosphate concentrations remain low and consistent with established trends.

- Work Plan for the 300 NPL Decision Unit:
  - An annotated topical outline for portions of the work plan that pertain to preliminary remedial action technologies has been developed and preparation of the text has begun.

- Other Activities:
  - *Annual Groundwater Report:* An initial draft of Section 2.12 "300-FF-5 Operable Unit" has been prepared and undergone internal review.
  - *Integrated Field-Scale Challenge Project, 300 Area*: No new information to pass along on this field research project.

Attachment 2

(2)

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans In Accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN-241	N/A	8 December 2008

Document Number and Title:
100-FR-3 Operable Unit Sampling and Analysis Plan, DOE/RL-2003-49, Rev. 1 and TPA-CN-228 (July 14, 2008).

Date Document Last Issued:
September 2004 (SAP); July 2008 (change notice)

Originator: Mary Hartman

Phone: 376-4385

Description of Change:

- Update Table 2, "Groundwater Sampling Matrix for the 100-FR-3 Operable Unit"
- Update Table A.1, "Changes to the 100-FR-3 Operable Unit Groundwater Monitoring Network and Rationale for Monitoring."

B. L. Charboneau (**RL**) and R.A. Lobos (**Lead Regulatory Agency**) agree that the proposed change modifies an approved work plan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:

Impacts of change: Sampling frequency of five wells are changed from annual to biennial. Add Sr-90 to one well.

Justification of changes: Table A.1 provides justification for each change. The table also explains the purpose of each monitoring well. Aquifer tubes are being removed from the 100-FR-3 sampling and analysis plan to eliminate overlap and potential conflict with a separate sampling and analysis plan for Hanford Site aquifer tubes.

Approvals:

RL Project Manager	12-8-08 Date	X Approved	__ Disapproved	
EPA Project Manager	12-9-08 Date	X Approved	__ Disapproved	

Table 2. Groundwater Sampling Matrix for the 100-FR-3 Operable Unit.

Well ID	Well Name	WAC Compliant	Contaminants of Concern								Supporting Constituents						
			Chromium (Hexavalent, Unfiltered)	Chromium (Total, Filtered)	Gross Alpha (Indicates Uranium)	Nitrate	Strontium-90	Trichloroethene	Tritium	Uranium (Total)	Alkalinity	Anions[a]	Metals (Filtered)[b]	Specific Conductance[c]	Temperature[c]	Turbidity[c]	Water Level[c]
A4586	199-F1-2	C		BO		BO					BO	BO	BO	BO	BO	BO	BO
A4587	199-F5-1	N		A	BE	A	BE		BE		A	A	A	A	A	A	A
A4590	199-F5-4	N		BO	BO	BO		BO	BO		BO	BO	BO	BO	BO	BO	BO
A4600	199-F5-6	N		A	BE	A	BE		BE		A	A	A	A	A	A	A
A4591	199-F5-42	C		BO	BO	BO	BO		BO		BO	BO	BO	BO	BO	BO	BO
A4592	199-F5-43A	C		BE	BE	BE	BE		BE		BE	BE	BE	BE	BE	BE	BE
A4593	199-F5-43B	C		BE	BE	BE	BE				BE	BE	BE	BE	BE	BE	BE
A4594	199-F5-44	C		BE	BE	BE	BE		BE		BE	BE	BE	BE	BE	BE	BE
A4595	199-F5-45	C		BO	BO	BO	BO	BO	BO	BO	BO	BO	BO	BO	BO	BO	BO
A4596	199-F5-46	C		BE	A	BE	BE	BE	A	A	BE	BE	BE	A	A	A	A
A4597	199-F5-47	C		BE	BE	BE			BE	BE	BE	BE	BE	BE	BE	BE	BE
A4598	199-F5-48	C		BO	BO	BO			BO	BO	BO	BO	BO	BO	BO	BO	BO
A4602	199-F6-1	C		BO	BO	BO	BO		BO		BO	BO	BO	BO	BO	BO	BO
A4603	199-F7-1	N		BE		BE		BE			BE	BE	BE	BE	BE	BE	BE
A4604	199-F7-2	C		BE	BE	BE		BE	BE		BE	BE	BE	BE	BE	BE	BE
A4605	199-F7-3	C		BE	BE	BE		BE	BE		BE	BE	BE	BE	BE	BE	BE

Well ID	Well Name	WAC Compliant	Contaminants of Concern								Supporting Constituents						
			Chromium (Hexavalent, Unfiltered)	Chromium (Total, Filtered)	Gross Alpha (Indicates Uranium)	Nitrate	Strontium-90	Trichloroethene	Tritium	Uranium (Total)	Alkalinity	Anions[a]	Metals (Filtered)[b]	Specific Conductance[c]	Temperature[c]	Turbidity[c]	Water Level[c]
A4607	199-F8-2	N		BO	BO	BO			BO	BO	BO	BO	BO	BO	BO	BO	BO
A4608	199-F8-3	C		BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE
A4609	199-F8-4	C		BE	BE	BE			BE	BE	BE	BE	BE	BE	BE	BE	BE
C6834	199-F8-7[(d)]	C	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
A5275	699-58-24	N		BE		BE					BE	BE	BE	BE	BE	BE	BE
A5279	699-60-32	N		BO		BO					BO	BO	BO	BO	BO	BO	BO
A5287	699-62-31	N		BO		BO					BO	BO	BO	BO	BO	BO	BO
A8944	699-62-43F	N		BE		BE			BE		BE	BE	BE	BE	BE	BE	BE
A5289	699-63-25A	N		BO		BO			BO		BO	BO	BO	BO	BO	BO	BO
A5291	699-63-55	N		BO		BO			BO		BO	BO	BO	BO	BO	BO	BO
A5295	699-64-27	N		BE		BE					BE	BE	BE	BE	BE	BE	BE
A5306	699-66-23	N		BE		BE			BE		BE	BE	BE	BE	BE	BE	BE
A5312	699-67-51	N		BO		BO			BO		BO	BO	BO	BO	BO	BO	BO
A5320	699-71-30	N		BO	BO	BO			BO		BO	BO	BO	BO	BO	BO	BO
A5328	699-74-44	N		BO		BO		BO			BO	BO	BO	BO	BO	BO	BO
A5330	699-77-36	N		BE		BE		BE			BE	BE	BE	BE	BE	BE	BE

Well ID	Well Name	WAC Compliant	Contaminants of Concern								Supporting Constituents						
			Chromium (Hexavalent, Unfiltered)	Chromium (Total, Filtered)	Gross Alpha (Indicates Uranium)	Nitrate	Strontium-90	Trichloroethene	Tritium	Uranium (Total)	Alkalinity	Anions[a]	Metals (Filtered)[b]	Specific Conductance[c]	Temperature[c]	Turbidity[c]	Water Level[c]
A5331	699-77-54	N		BO		BO					BO	BO	BO	BO	BO	BO	BO
A5337	699-81-38	N		BE		BE					BE	BE	BE	BE	BE	BE	BE
A5341	699-83-47	N		BE		BE		BE			BE	BE	BE	BE	BE	BE	BE
None	Spring SF-187-1	--	A		A[(e)]	A			A			A		A	A	A	
None	Spring SF-190-4	--	A		A[(e)]	A			A			A		A	A	A	
None	Spring SF-207-1	--	A		A[(e)]	A			A			A		A	A	A	

Shading indicates change from TPA-CN-228. See Table A.1 for details.

A = to be sampled annually
BE = to be sampled biennially in even fiscal years (e.g., FY 2008)
BO = to be sampled biennially in odd fiscal years (e.g., FY 2009)
Q = to be sampled quarterly
SAP = sampling and analysis plan
TCE = trichloroethene
x = not analyzed

(a) Anions – Analytes include but not limited to chloride, nitrate, and sulfate.
(b) Metals – Analytes include but not limited to calcium, chromium, potassium, magnesium, and sodium.
(c) Field parameter
(d) Quarterly for one year; annually thereafter
(e) Also gross beta (indicates Sr-90)

Table A.1. Changes to the 100-FR-3 Operable Unit Groundwater Monitoring Network and Rationale for Monitoring.

Well, Aquifer Tube, or Spring	Alkalinity	Anions (Nitrate)	Alpha	Hexavalent Chromium	Metals (total chromium)	TCE	Sr-90	Tritium	Uranium	Changes from TPA-CN-228	Rationale
199-F1-2	BO	BO	x	x	BO	x	x	x	x	No change	Upstream; local background.
199-F5-1	A	A	BE	x	A	x	BE	BE	x	No change	Monitors 116-F-2 trench; in Sr-90 plume. Near river.
199-F5-4	BO	BO	BO	x	BO	BO	x	BO	x	Change metals, anions, alkalinity, and field parameters to biennial.	Monitors 116-F-6 trench and other waste sites. NO3>DWS; detectable TCE. Biennial frequency sufficient because of proximity to 199-F5-47.
199-F5-6	A	A	BE	x	A	x	BE	BE	x	No change.	NO3 and Sr-90 elevated but <DWS. Helps bound plumes. Near river.
199-F5-42	BO	BO	BO	x	BO	x	BO	BO	x	No change.	Sr-90 elevated but <DWS. Near river.
199-F5-43A	BE	BE	BE	x	BE	x	BE	BE	x	No change.	Monitors 116-F-9 trench. Sr-90 elevated but <DWS. Near river.
199-F5-43B	BE	BE	BE	x	BE	x	BE	x	x	No change.	Deeper well paired with 199-F5-43A.
199-F5-44	BE	BE	BE	x	BE	x	BE	BE	x	No change.	NO3 elevated but <DWS. Sr-90 sometimes >DWS. Near river.
199-F5-45	BO	BO	BO	x	BO	BO	BO	BO	BO	No change.	NO3>DWS; Sr-90 undetected (helps bound plume). Detectable and declining TCE. Uranium above background but <DWS.
199-F5-46	BE	BE	A	x	BE	BE	BE	A	A	No change.	NO3 and Sr-90 >DWS. Alpha and uranium above background and variable, but <DWS. Detectable TCE.
199-F5-47	BE	BE	BE	x	BE	x	x	BE	BE	Change from annual to biennial.	Monitors 116-F-6 trench and other waste sites. NO3>DWS. Uranium above background but <DWS. BE sufficient because trends consistent; and other wells are nearby.
199-F5-48	BO	BO	BO	x	BO	x	x	BO	BO	No change.	NO3>DWS; uranium has been above background but <DWS.
199-F6-1	BO	BO	BO	x	BO	x	BO	BO	x	No change.	Near river. Sr-90 near detection limit (helps bound plume)
199-F7-1	BE	BE	x	x	BE	BE	x	x	x	No change.	NO3 and TCE>DWS, declining.

Table A.1. Changes to the 100-FR-3 Operable Unit Groundwater Monitoring Network and Rationale for Monitoring.

Well, Aquifer Tube, or Spring	Alkalinity	Anions (Nitrate)	Alpha	Hexavalent Chromium	Metals (total chromium)	TCE	Sr-90	Tritium	Uranium	Changes from TPA-CN-228	Rationale
199-F7-2	BE	BE	BE	x	BE	BE	x	BE	x	No change.	Monitors 116-F-1 trench. NO3>DWS. TCE detectable but <DWS.
199-F7-3	BE	BE	BE	x	BE	BE	x	BE	x	No change.	NO3>DWS. TCE formerly >DWS, now declining.
199-F8-2	BO	BO	BO	x	BO	x	x	BO	BO	No change.	Monitors 116-F-5 crib. NO3>DWS. Uranium elevated but <DWS.
199-F8-3	BE	BE	BE	x	BE	BE	BE	BE	BE	Add Sr-90; change alpha, tritium, uranium, and field parameters to biennial. Change to even years.	Sr-90 detections in nearby 116-F-6 Burial Ground. NO3>DWS. Alpha and uranium <DWS and not changing rapidly. Tritium formerly >DWS. TCE undetected (helps bound plume).
199-F8-4	BE	BE	BE	x	BE	x	x	BE	BE	Change alpha, uranium, and field parameters to biennial.	Only well in SE 100-F Area. NO3>DWS. Alpha and uranium <DWS and not changing rapidly
199-F8-7[a]	Q	Q	x	Q	Q	Q	Q	Q	Q	No change.	Monitors 118-F-6 Burial Ground. Sr-90 detected in shallow groundwater. Well located in NO3 plume; near TCE plume.
699-58-24	BE	BE	x	x	BE	x	x	x	x	No change.	General chemistry downstream of 100-F. NO3<DWS.
699-60-32	BO	BO	x	x	BO	x	x	x	x	No change.	General chemistry downgradient of 100-F. NO3<DWS.
699-62-31	BO	BO	x	x	BO	x	x	x	x	No change.	Monitors NO3 plume downgradient of 100-F.
699-62-43F	BE	BE	x	x	BE	x	x	BE	x	Change from annual to biennial sampling.	Monitors regional chemistry. Nitrate and tritium below DWS and declining.
699-63-25A	BO	BO	x	x	BO	x	x	BO	x	No change.	General chemistry downgradient of 100-F. NO3<DWS.
699-63-55	BO	BO	x	x	BO	x	x	BO	x	Change tritium and field parameters from annual to biennial.	Monitors regional chemistry. Tritium below DWS; steady past 5 years.
699-64-27	BE	BE	x	x	BE	x	x	x	x	No change.	Monitors NO3 plume downgradient of 100-F. Steady trend.

Table A.1. Changes to the 100-FR-3 Operable Unit Groundwater Monitoring Network and Rationale for Monitoring.

Well, Aquifer Tube, or Spring	Alkalinity	Anions (Nitrate)	Alpha	Hexavalent Chromium	Metals (total chromium)	TCE	Sr-90	Tritium	Uranium	Changes from TPA-CN-228	Rationale
699-66-23	BE	BE	x	x	BE	x	x	BE	x	No change.	Monitors downgradient of 100-F. NO3 near DWS.
699-67-51	BO	BO	x	x	BO	x	x	BO	x	No change.	Monitors regional chemistry.
699-71-30	BO	BO	BO	x	BO	x	x	BO	x	No change.	Monitors NO3 plume downgradient of 100-F. Steady trend.
699-74-44	BO	BO	x	x	BO	BO	x	x	x	No change.	Monitors regional chemistry.
699-77-36	BE	BE	x	x	BE	BE	x	x	x	No change.	Near upgradient of 100-F Area. TCE>DWS and declining. NO3 formerly >DWS and declining.
699-77-54	BO	BO	x	x	BO	x	x	x	x	No change.	Monitors regional chemistry.
699-81-38	BE	BE	x	x	BE	x	x	x	x	No change.	Upgradient of 100-F.
699-83-47	BE	BE	x	x	BE	BE	x	x	x	No change.	Monitors regional chemistry. Detectable TCE, source unknown.
Aquifer tubes	x	x	x	x	x	x	x	x	x	Defer to aquifer tube SAP.	Eliminate overlap between documents.
Spring SF-187-1	x	A	A	A	x	x	x	A	x	Delete metals, alkalinity; add alpha/beta	Focus on contaminants
Spring SF-190-4	x	A	A	A	x	x	x	A	x	Delete metals, alkalinity; add alpha/beta	Focus on contaminants
Spring SF-207-1	x	A	A	A	x	x	x	A	x	Delete metals, alkalinity; add alpha/beta	Focus on contaminants

A = annually
BE = biennially in even fiscal years (e.g., FY08)
BO = biennially in odd fiscal years (e.g., FY09)
DWS = drinking water standard
ND = not detected
SAP = sampling and analysis plan
SESP = sitewide environmental surveillance program
TCE = trichloroethene
x = not analyzed

(a) Quarterly for first year; annually thereafter.

Attachment 3

DRAWING NO.	REV. NO.
0100H-DD-C0131	2

PROJECT LIMITS

E 577000

N 153600

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

BOTTOM OF EXCAVATION ELEVATION 120.93

TOP OF EXCAVATION

N 153400

600-152 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0138

118-H-2 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0134

100-H-37 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0137

118-H-1 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0133

PROJECT LIMITS

N 153000

E 577400

E 577600

E 577800

ABOVE GROUND TREATMENT FACILITY PIPING

182-H RESERVOIR PUMP HOUSE

EXCLUSION ZONE SEE NOTE 3

199-H4-15A

POTENTIAL LAYDOWN AREA SEE NOTE 6

199-H4-8

PUMP BLDG

199-H4-12A

TOP OF EXCAVATION

COLUMBIA RIVER

E 578200

HARTLINE STREET

199-H4-6

199-H5-7

HEAD HOUSE

199-H4-9

FORMER SOLAR BASINS

100-H-33 SAMPLE PLAN SEE DWG 0100H-DD-C0146

183-H FILTER PLANT

RESERVOIR #1

RESERVOIR #2

PUMP HOUSE

PIPE TRENCH

199-H4-3

199-H4-4

199-H4-65

BOTTOM OF EXCAVATION ELEVATION 115.02M

N 152800

TREATMENT FACILITY

199-H3-2A

HOKO DRIVE

PROPOSED AIR MONITOR

116-H-5 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0132

199-H5-1B

199-H4-10

199-H4-11

HOBSON ROAD

PROPOSED AIR MONITOR

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

EXCLUSION ZONE SEE NOTE 3

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

BOTTOM OF EXCAVATION ELEVATION 121.43 TYPICAL 3 PLACES

TRENCH A TRENCH B TRENCH C

N 152600

151-H

1908-H

M0229

SEE NOTE 4

SUPPORT FACILITIES AREA

SUPPORT FACILITIES AREA

SEE NOTE 4

HERRON STREET

WH AVENUE

BOTTOM OF EXCAVATION ELEVATION 124.73

EXISTING FENCE

105-H

TOP OF EXCAVATION

BOTTOM OF EXCAVATION ELEVATION 123.62

TRENCH E TRENCH F

118-H-4, 118-H-5, AND 116-H-9 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0136

1908-H

199-H4-49

199-H3-1

BOTTOM OF EXCAVATION ELEVATION 124.93M

199-H4-46

H AVENUE

PROPOSED AIR MONITOR

116-H-1 REF

N 152400

TOP OF EXCAVATION

BOTTOM OF EXCAVATION ELEVATION 124.43

199-H3-3

ABOVE GROUND TREATMENT FACILITY PIPING

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

BOTTOM OF EXCAVATION ELEVATION 119.40

199-H3-5

199-H3-4

199-H5-1A

TRENCH B

TRENCH C

BRASS SURVEY MARKER

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

118-H-3 CIVIL PLOT PLAN SEE DWG 0100H-DD-C0135

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

TRENCH A TRENCH D TRENCH C TRENCH B

BOTTOM OF EXCAVATION ELEVATION 120.93 TYPICAL 4 PLACES

N 152200

CONTAINER TRANSFER AREA

BOTTOM OF EXCAVATION ELEVATION 123.93

TOP OF EXCAVATION

PROPOSED AIR MONITOR

TOP OF EXCAVATION

TRENCH J TRENCH D

CONCRETE BURIAL MARKER

POTENTIAL STAGING/ STOCKPILE AREA SEE NOTE 6

N 152000

SCALE 1:2000

20 0 20 40 80 meters

NOTES

1. SEE DRAWING 0100H-DD-G0009 FOR GENERAL ABBREVIATIONS AND SYMBOLS LIST.
2. SUBCONTRACTOR TO INSTALL AIR MONITORS AND PROVIDE ELECTRICAL POWER TO AIR MONITOR STATIONS SHOWN AND MAINTAIN STATIONS IN COMPLIANCE WITH THE SUBCONTRACT DOCUMENTS. AIR MONITOR STATION EQUIPMENT PROVIDED BY CONTRACTOR. SUBCONTRACTOR SHALL MAINTAIN VEHICLE ACCESS TO AIR MONITOR STATIONS FOR THE DURATION OF PROJECT.
3. NO PROJECT ACTIVITIES MAY TAKE PLACE, INCLUDING PEDESTRIAN TRAFFIC, OUTSIDE OF THE PROJECT LIMITS OR INSIDE EXCLUSION ZONE WITHOUT WRITTEN AUTHORIZATION FROM THE CONTRACTOR.
4. SUBCONTRACTOR SHALL SUPPLY SUPPORT TRAILER(S) THAT ARE IN ADDITION TO THE EXISTING CONTRACTOR SUPPORT FACILITY. INSTALLATION SHALL BE COORDINATED WITH THE CONTRACTOR.
5. SUBCONTRACTOR SHALL SUPPLY SURVEY AND DECONTAMINATION STATION. INSTALLATION SHALL BE COORDINATED WITH THE CONTRACTOR.
6. STAGING OF MATERIAL SHALL OCCUR WITHIN THE AOC/WASTE SITE BOUNDARY UNLESS DIRECTED BY CONTRACTOR. STAGING OF MATERIAL OUTSIDE THE AOC/WASTE SITE BOUNDARY, SHALL HAVE PRIOR APPROVAL IN WRITING BY THE CONTRACTOR.
7. LAYDOWN AREA SHALL BE USED FOR STAGING OF SAMPLE MATERIAL AND EQUIPMENT. STAGING OF MATERIAL OUTSIDE THE LAYDOWN AREA SHALL HAVE PRIOR APPROVAL BY THE CONTRACTOR BEFORE PROCEEDING.

DOCUMENT CONTROL mlc 1/31/08

TINA M. BURT STATE OF WASHINGTON 39625 REGISTERED PROFESSIONAL ENGINEER 1/31/08

EXPIRES: 9-2-2008

REV.	DATE	DESCRIPTION	DRAWN BY	DRAFT CHK	ORIG CHK	ENGR CHK	SYS ENGR	PROJ ENGR
2	1/30/08	ISSUED FOR CONSTRUCTION	JWW	CAB	TMB	JEL	NA	MLC
1	10/11/07	ISSUED FOR BID TO ADD NEW SITES	JWW	CAB	TMB	JEL	NA	SCW
0	02/08/07	ISSUED FOR BID	JWW	CAB	TMB	RAC	NA	JSD

SCALE: AS SHOWN

U.S. DEPARTMENT OF ENERGY
DOE RICHLAND OPERATIONS OFFICE
RIVER CORRIDOR CLOSURE CONTRACT

WASHINGTON CLOSURE HANFORD LLC.
RICHLAND, WASHINGTON

100 H AREA
100 H BURIAL GROUNDS AND REMAINING SITES
OVERALL WASTE SITE LOCATION PLAN

WCH JOB NO.	DOE CONTRACT NO.	CADD FILENAME
14655	DE-AC06-05RL-14655	1HDC0131.DWG

TASK	DRAWING NO.	REV. NO.
100H	0100H-DD-C0131	2

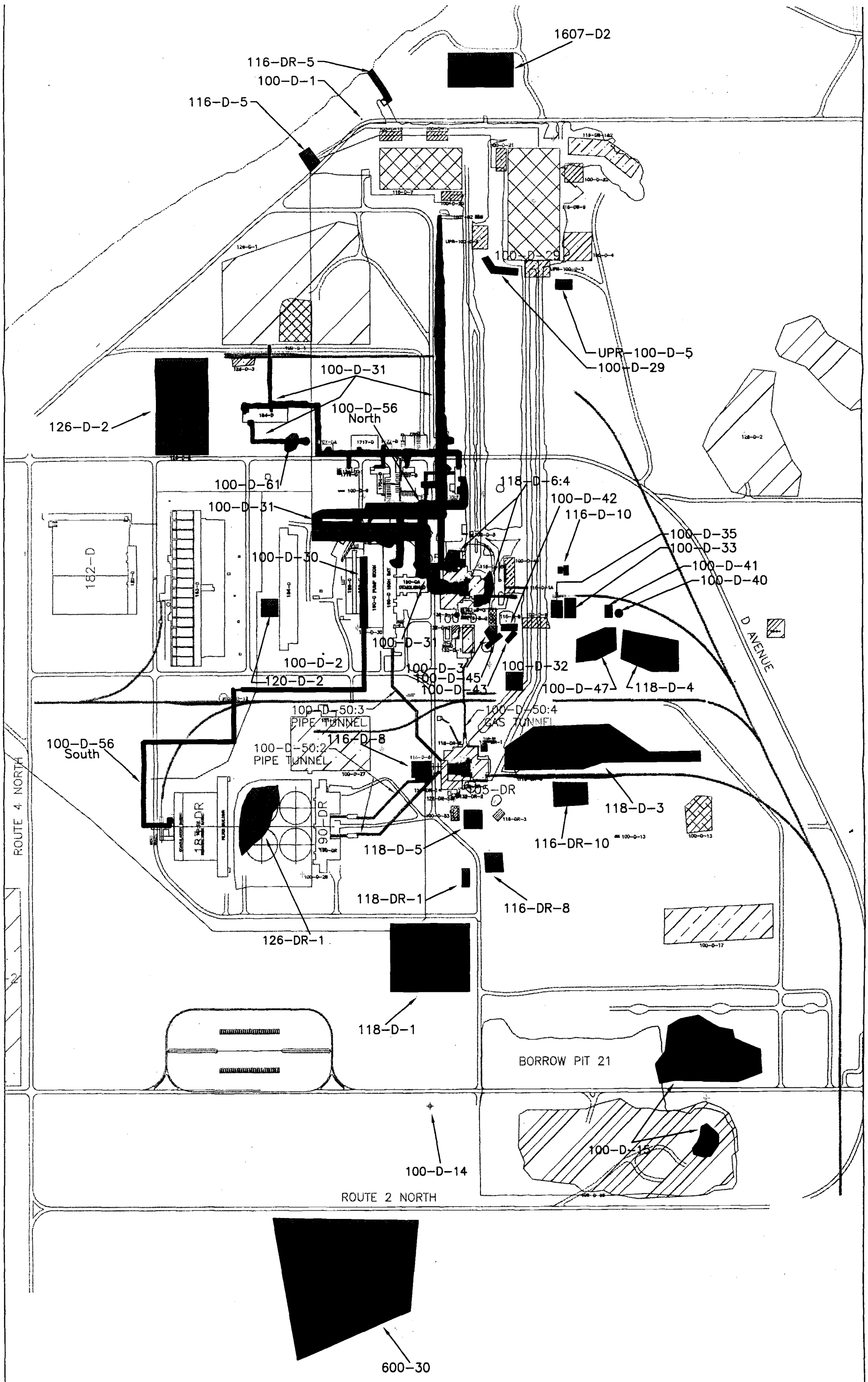
RECORD INFORMATION

RECORD NO.	BLDG NO.	INDEX NO.
H-1-89027 SHT 01	100H	0110

RIVER CORRIDOR CLOSURE CONTRACT
Dedicated to Safety Excellence

(3)

Attachment 4



WCH 100D Field Remediation	(or bold) remediated in whole or in part	For Information Only (December '08)

Attachment 5

100 Area D4/ISS Status
January 8, 2008

100/300 Area Combined Unit Manager Meeting

Completed Activities

- Hazardous Material (hazmat) removal activities completed for 181N, 181NA, 181NB, 181NE and 1112N
- Concrete roof hatches removed from 107N and readied for disposal.
- 107N Ion Exchange Tanks have been removed from the building, awaiting disposal
- 116N Stack above-grade waste load out
- Draft D4 Facility Completion Reports for DOE / Regulator review – 105NB, 1705N/NA, 1706N, 1712N, and 1714N/NA/NB
- Post-Demolition Summary Reports for the 184N, 184NA – 184NF Power House, 1330-N Waste Storage Facility and 1802-N Pipe Trestle

NCES-PAS Subcontractor Activities

As of December, this subcontractor has completed their scope of work for hazmat removal within 105N/109N and has demobilized from the 100-N Area project.

WM Dickson Subcontractor Activities

Above-grade demolition of the 109N pipe & pipe-structure has begun. Size reduction and waste load out of this material is ongoing.

Proposed work through 1/31/09

- 107N – continue hazmat removal, remove and ship to ERDF two cation exchange tanks (IE-1 and IE-2)
- 1112N above-grade demolition
- 1706NA below-grade demolition
- Continue asbestos abatement in 182N
- Begin above grade demolition of 105N office
- Prepare Post-Demolition Summary Report for 108N,
- Post removal characterization activities at 13N, 108N, 1525N to include:
    - LARADS/GPERS analysis
    - GPS survey
    - Visual evaluation
- Draft D4 Facility Completion Report for the 184N, 184NA – 184NF Power House

Attachment 6

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans In Accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN-240	N/A	8 December 2008

Document Number and Title:
100-BC-5 Operable Unit Sampling and Analysis Plan, DOE/RL-2003-38, Rev 1 and TPA-CN-182 (September 6, 2007).

Date Document Last Issued: September 2004 (SAP); September 2007 (change notice)

Originator: Mary Hartman

Phone: 376-4385

Description of Change:

- Update Table 2, "Groundwater Sampling Matrix for the 100-BC-5 Operable Unit."
- Update Table A.1, "Changes to the 100-BC-5 Operable Unit Groundwater Monitoring Program and Rationale for Monitoring Parameters and Frequency."

B. L. Charboneau (**RL**) and L. C. Buelow (**Lead Regulatory Agency**) agree that the proposed change modifies an approved work plan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:

Impacts of change: Two wells in the 600 Area removed from the monitoring network. Sampling frequency of one well changed from quarterly to monthly; two wells changed from biennial to annual; three wells changed from annual to biennial. Hexavalent chromium added to one well. Gross alpha and gross beta deleted from ten wells and added to one. Strontium-90 deleted from two wells. Nitrate added as contaminant of concern in Table 2 based on 100-B/C Pilot Risk Assessment.

Justification of changes: Table A.1 provides justification for each change. The table also explains the purpose of each monitoring well. Aquifer tubes are being removed from the 100-BC-5 sampling and analysis plan to eliminate overlap and potential conflict with a separate sampling and analysis plan for Hanford Site aquifer tubes.

Approvals:

RL Project Manager	12-8-08 Date	X Approved	__ Disapproved	
EPA Project Manager	12-9-08 Date	X Approved	__ Disapproved	

Table 2. Groundwater Sampling Matrix for the 100-BC-5 Operable Unit.

Well ID	Well Name	WAC Compliant	Contaminants of Concern[a]				Supporting Constituents and Parameters									
			Hexavalent Cr (unfiltered)	Nitrate[a]	Strontium-90	Tritium	Alkalinity	Anions[b]	Metals (filtered, unfiltered)[c]	Gross Alpha	Gross Beta	Technetium-99	Specific Conductance[d]	Temperature[d]	Turbidity[d]	Water Level[d]
A4550	199-B2-12	C	BO	BO	BO	BO	BO	BO	BO				BO	BO	BO	BO
A4551	199-B2-13	C	BE	BE	BE	BE	BE	BE	BE				BE	BE	BE	BE
A4552	199-B3-1	N	A	BE	A	A	BE	BE	BE				A	A	A	A
A4553	199-B3-46	C	A	BO	A	A	BO	BO	BO				A	A	A	A
A4554	199-B3-47	C	A	BE	A	A	BE	BE	BE				A	A	A	A
A4555	199-B4-1	N	A	BE	BE	A	BE	BE	BE				A	A	A	A
A4557	199-B4-4	N			BE	BE							BE	BE	BE	BE
A5540	199-B4-5	C														A
A4558	199-B4-6	C														A
A5541	199-B4-7	C	BO	BO	BO	BO	BO	BO	BO				BO	BO	BO	BO
A4559	199-B4-8	C	BE	BE	BE	BE	BE	BE	BE				BE	BE	BE	BE
A4561	199-B5-1	N	A	BE	BE	A	BE	BE	BE				A	A	A	A
A4562	199-B5-2	C	A		BO	A							A	A	A	A
A4563	199-B8-6	C	A	BO	BO	A	BO	BO	BO	BO	BO		A	A	A	A
C5671	199-B8-7	C	Q	Q		Q	Q	Q	Q	Q	Q		Q	Q	Q	Q
C5672	199-B8-8	C	M	Q		Q	Q	Q	Q	Q	Q		M	M	M	M
A4565	199-B9-2	C	BE			BE				BE	BE		BE	BE	BE	BE
A4566	199-B9-3	C	BO	BO		BO	BO	BO	BO	BO	BO		BO	BO	BO	BO
A5293	699-63-90	N		BE		BE	BE	BE	BE	BO	BO		BE	BE	BE	BE
~~A5302~~	~~699-65-72~~	~~N~~				~~BE~~	~~BE~~	~~BE~~	~~BE~~				~~BE~~	~~BE~~	~~BE~~	~~BE~~
A5303	699-65-83	N				BE							BE	BE	BE	BE
~~A5305~~	~~699-66-103~~					~~BE~~							~~BE~~	~~BE~~	~~BE~~	~~BE~~
A5313	699-67-86	N				BO							BO	BO	BO	BO
A5315	699-68-105	N		BO		BO	BO	BO	BO				BO	BO	BO	BO
A5322	699-71-77	N		BO		BO	BO	BO	BO			BO	BO	BO	BO	BO

Well ID	Well Name	WAC Compliant	Contaminants of Concern[a]				Supporting Constituents and Parameters									
			Hexavalent Cr (unfiltered)	Nitrate[a]	Strontium-90	Tritium	Alkalinity	Anions[b]	Metals (filtered, unfiltered)[c]	Gross Alpha	Gross Beta	Technetium-99	Specific Conductance[d]	Temperature[d]	Turbidity[d]	Water Level[d]
A5323	699-72-73	N		BE		BE	BE	BE	BE			BE	BE	BE	BE	BE
A5325	699-72-92	N		BO		BO	BO	BO	BO				BO	BO	BO	BO
None	Spring 037-1	--	A			A				A	A		A	A	A	
None	Spring 039-2	--	A			A				A	A		A	A	A	

Shading indicates change from TPA-CN-182. See Table A.1 for details.
(a) Nitrate not identified as groundwater contaminant of concern in PNNL-14287, but was identified as such in DOE/RL-2005-40.
(b) Anions – Analytes include but not limited to chloride, nitrate, and sulfate.
(c) Metals – Analytes include but not limited to calcium, chromium, potassium, magnesium, and sodium.
(d) Field parameter
A = To be sampled annually.
BE = To be sampled biennially in even-numbered fiscal years (e.g., fiscal year 2008).
BO = To be sampled biennially in odd-numbered fiscal years (e.g., fiscal year 2009).
C = Well is constructed as a WAC 173-160 resource protection well.
M = To be sampled monthly.
N = Well construction is not compliant with WAC 173-160 resource protection well requirements.
Q = To be sampled quarterly.

Table A.1. Changes to 100-BC-5 Operable Unit Groundwater Monitoring Program and Rationale for Monitoring.

Well	Alkalinity	Anions	Alpha and Beta	Hexavalent Chromium	Metals	Strontium-90	Tritium	Technetium-99	Changes from Previous Monitoring Program (TPA-CN-182)	Rationale
199-B2-12	BO	BO	x	BO	BO	BO	BO	x	Delete alpha and beta[a]	Deep well paired with 199-B3-47
199-B2-13	BE	BE	x	BE	BE	BE	BE	x	Change Cr6 and field parameters to BE; Delete alpha and beta[a]	Upstream; local background. Cr consistently <20 ug/L since 2001.
199-B3-1	BE	BE	x	A	BE	A	A	x	None.	Monitors 116-B-1 trench. Near river. Sr>DWS. Cr>20 ug/L. NO3 >DWS 1997-1998. Tritium spike 1998
199-B3-46	BO	BO	x	A	BO	A	A	x	None.	116-C-1 trench. Near river. Sr>DWS. Cr<20 ug/L
199-B3-47	BE	BE	x	A	BE	A	A	x	Delete alpha and beta[a]	Monitors 116-B-11 retention basin. Near river. Sr-90>DWS. Tritium variable and sometimes >DWS. Cr>20 ug/L. NO3 elevated but <DWS.
199-B4-1	BE	BE	x	A	BE	BE	A	x	Change Cr6, tritium, and field parameters from BE to A. Delete alpha and beta[a]	Monitors 116-B-5 crib. Cr>20 ug/L. Sr-90>DWS. Tritium variable, sometimes >DWS.
199-B4-4	x	x	x	x	x	BE	BE	x	Delete alpha and beta[a]	Sr-90>DWS. Tritium<DWS.
199-B4-7	BO	BO	x	BO	BO	BO	BO	x	Delete alpha and beta[a]	Cr sometimes >20 ug/L. Sr-90 detectable but <DWS (bounds plume)
199-B4-8	BE	BE	x	BE	BE	BE	BE	x	Change Cr6 and field parameters to BE. Delete alpha and beta[a]	Cr sometimes >20 ug/L. Sr-90 detectable but <DWS (bounds plume)
199-B5-1	BE	BE	x	A	BE	BE	A	x	Delete alpha and beta[a]	Cr and tritium variable, formerly >DWS. Sr-90 low detectable. Only well in west-central 100-B.
199-B5-2	x	x	x	A	x	BO	A	x	Delete alpha and beta[a]	Cr>20 ug/L and increasing; Sr-90>DWS; tritium variable, sometimes >DWS
199-B8-6	BO	BO	BO	A	BO	BO	A	x	Change Cr6 from biennial to annual.	Monitors 118-B-1 burial ground. Tritium>DWS. Cr<20 ug/L. Only well near the burial ground.
199-B8-7	Q	Q	Q	Q	Q	x	Q	x	None.	Monitors 100-C-7 waste site. Tritium >DWS, Cr<20 ug/L. Relatively new well; will be decommissioned when waste site remediated.
199-B8-8	Q	Q	Q	M	Q	x	Q	x	Change Cr6 from quarterly to monthly.	Monitors 100-C-7 waste site. Tritium >DWS. Relatively new well; will be decommissioned when

Well	Alkalinity	Anions	Alpha and Beta	Hexavalent Chromium	Metals	Strontium-90	Tritium	Technetium-99	Changes from Previous Monitoring Program (TPA-CN-182)	Rationale
										waste site remediated. Cr6 increase >20 ug/L 2008.
199-B9-2	x	x	BE	BE	x	x	BE	x	Add Cr6; delete Sr-90.	Monitors waste sites in SE 100-B. Sr-90 undetected; beta sufficient.
199-B9-3	BO	BO	BO	BO	BO	x	BO	x	Add alpha/beta; delete Sr-90.	Monitors waste sites in SE 100-B. Cr ~20 ug/L; Sr-90 undetected; tritium and nitrate low. General chemistry.
699-63-90	BE	BE	x	x	BE		BE	x	Delete alpha and beta[a]	Between Umtanum Ridge and Gable Butte. General chemistry and tritium only.
699-65-72	x	x	x	x	x	x	x	x	Delete well.	SE of 100-B. NO3 low; tritium undetected past 10 years. Other wells monitor inflow of 200 East better.
699-65-83	x	x	x	x	x	x	BE	x	None.	South of 100-B. Not needed to monitor plumes or regional chemistry.
699-66-103	x	x	x	x	x	x	x	x	Delete well.	Was monitored only for tritium (undetected). Not needed. Redundant with well 699-68-105.
699-67-86	x	x	x	x	x	x	BO	x	None.	SW of 100-B. Helps bound tritium plume (low to undetected).
699-68-105	BO	BO	x	x	BO	x	BO		None.	Farthest upgradient well. Background chemistry.
699-71-77	BO	BO	x	x	BO	x	BO	BO	None.	Just east of 100-B. Monitor for influence of 200 Areas plume, general chemistry.
699-72-73	BE	BE	x	x	BE	x	BE	BE	Change from annual biennial.	Monitors 200 Areas plume east of 100-B. Tritium once >DWS. Stable trends.
699-72-92	BO	BO	x	x	BO	x	BO	x	None.	West of 100-B. NO3 once >DWS, source unknown.
Aquifer Tubes	x	x	x	x	x	x	x	x	Defer to aquifer tube SAP.	Eliminate overlap between documents.
Spring 037-1	x	x	A	A	x	x	A	x	Add hexavalent Cr.	Focus on contaminants of concern or screening parameters.
Spring 039-2	x	x	A	A	x	x	A	x	Add hexavalent Cr.	Focus on contaminants of concern or screening parameters.

(a) Rationale for deleting alpha and beta: gross alpha in these wells is at background levels. Gross beta reflects presence of Sr-90 and/or low levels of Tc-99, which are analyzed specifically. Retain alpha and beta as indicators in wells near waste sites where groundwater is not as well characterized (southern 100-B/C Area).

Well	Alkalinity	Anions	Alpha and Beta	Hexavalent Chromium	Metals	Strontium-90	Tritium	Technetium-99	Changes from Previous Monitoring Program (TPA-CN-182)	Rationale

A = annually
BE = biennially in even fiscal years (e.g., FY08)
BO = biennially in odd fiscal years (e.g., FY09)
DWS = drinking water standard
M = monthly
Q = quarterly
SAP = sampling and analysis plan
x = not analyzed

Attachment 7

(5)

300 Area D4 Status
January 8, 2009
100/300 Area Combined Unit Manager Meeting

Hazardous Material Removal

- 324 – ongoing hazardous material and inventory removal in high-bay and galleries
- 327 –duct removal completed first floor, initiate removal in basement
- 308 – hazardous material and glovebox removal ongoing
- 309 – ACM removal in support areas complete, characterization and surveys below grade initiated

Ready for Demolition

- 324 office wing, mechanic shop, and 324C

Demolition Activities

- 3728, 3718C, and 3727 slabs
- Complete remainder at 321 and 323

60-Day Project Look Ahead

- Begin hazardous material removal at 338, 315, 336, and 3718M
- 308 glovebox shipments to ERDF and Permafix
- Mobilize subcontractor for 327 hot-cell removal
- Continue 324 office wing, mechanic shop, and 324C

Attachment 8

Mission Completion
Sample Design and Cleanup Verification
for the January 2009 UMM

AREA	DOE-RL/REGULATOR DELIVERABLE	START	FINISH
100-B/C Area			
	RL/Regulator Review Draft A Closure Document for 100-B-21:3	3/30/2009	5/12/2009
100-D Area			
	RL/Regulator Review Draft A Work Instruction for 116-DR-8	12/8/2008 (A)	1/31/2009
	RL/Regulator Review Draft A Work Instruction for 118-D-5	12/18/2008 (A)	1/31/2009
	RL/Regulator Review Draft A Work Instruction for 100-D-31:1 and :2	1/7/2009	2/20/2009
	RL/Regulator Review Draft A Work Instruction for 116-D-10	1/7/2009	2/20/2009
	RL/Regulator Review Draft A Work Instruction for 118-DR-1	1/20/2009	3/5/2009
	RL/Regulator Sign Rev. 0 Work Instruction for 100-D-56:2	1/26/2009	1/29/2009
	RL/Regulator Review Draft A Work Instruction for 116-D-8	1/29/2009	3/14/2009
	RL/Regulator Review Draft A Work Instruction for UPR-100-D-5	1/12/2009	2/25/2009
	RL/Regulator Review Draft A Work Instruction for 126-D-2	2/5/2009	3/5/2009
	RL/Regulator Review Draft A Closure Document for 120-D-2	2/17/2009	4/2/2009
	RL/Regulator Review Draft A Closure Document for 100-D-3	3/31/2009	5/13/2009
100-F Area			
	RL Review Bid and Approve 100-F Remediation Subcontract	2/3/2009	2/22/2009
100-H Area			
	RL Review Draft A Closure Document for 100-H-28:1	11/18/2008 (A)	1/15/2009
	RL/Regulator Review Draft A Closure Document for 100-H-28:6	1/13/2009	2/26/2009
	RL/Regulator Sign Rev. 0 Closure Document for 100-H-28:1	1/20/2009	1/27/2009
	RL/Regulator Review of Draft A 128-H-2 Closure Doc	1/29/2009	3/17/2009
	RL/Regulator Review of Draft A 128-H-3 Closure Doc	1/29/2009	3/17/2009
	RL/Regulator Review Draft A Work Instruction for 118-H-5	2/2/2009	3/18/2009
	RL/Regulator Review Draft A Work Instruction for 600-152	2/18/2009	3/17/2009
100-K Area			
	RL/Regulator Review Draft A Work Instruction for 100-K-78	3/2/2009	4/14/2009
	RL/Regulator Review Draft A Work Instruction for 126-K-1	3/2/2009	4/14/2009
	RL/Regulator Review Draft A Work Instruction for 600-29	3/5/2009	4/20/2009
100-N Area			
	RL/Regulator Sign and Issue Rev. 1 Closeout Document 116-N-1	1/26/2009	3/11/2009
100-IU-2/100-IU-6			
	Regulator Sign Rev. 0 Closure Document for 600-149	1/5/2009 (A)	1/12/2009
100 Area			
	RL/Regulator Review of 100 Area Remedial Design Report	10/22/2008 (A)	1/12/2009
	RL/Regulator Review of 100 Area Sampling and Analysis Plan	10/22/2008 (A)	1/12/2009
	RL/Regulator Review of Draft 100 Area ESD	12/22/2008 (A)	2/12/2009
	RL Approve and Issue Rev. 0 of 100 Area Remedial Design Report	3/11/2009	3/17/2009
	RL Approve and Issue Rev. 0 of 100 Area Sampling and Analysis Plan	3/11/2009	3/17/2009
300 Area			
	RL Approve 618-10/11 Sampling and Analysis Plan Rev. 0	8/19/2008 (A)	1/12/2009
	RL/Regulator Review Draft A Closure Document for 618-7	12/16/2008 (A)	1/31/2009
	RL/Regulator Review of 300 Area Sampling and Analysis Plan	12/18/2008 (A)	2/11/2009
	RL Review 300 Area Remedial Design Report	12/18/2008 (A)	2/11/2009
	RL Review 300 Area ESD	2/2/2009	3/23/2009

All Data is Based on FY09/10 CPP with December 2008 Month End Status

Attachment 9

(B) (9)

Environmental Protection Mission Completion Project
January 9, 2009

Orphan Sites Evaluations

- Received EPA signatures for the 100-IU-2/6 MP-14 forms in December. The 100-K MP-14 forms will be submitted to EPA for review/signature in January.
- A briefing of the 100-N orphan site evaluation findings is planned for late January - early February.
- Continuing orphan site evaluations for 300-FF-2 and Inter-Areas Segment 1.

River Corridor Baseline Risk Assessment

- Volume 2 (human health) out for informal regulator review through January 23.
- Continuing work to address regulator comments and update Volume 1 (ecological).

Remedial Investigation of Hanford Releases to Columbia River

- Continuing to conduct groundwater upwelling surveys (work plan Phase IIa).
- Sampling campaign for shallow/deep sediments anticipated to resume in early February, followed by shoreline sediments, and island soil.
- Integral Consulting working on logistics to begin core sampling following sediment/soil campaign completion (~March).
- EAS anticipated to begin electrofishing (whitefish) in late January. Logistics for first sturgeon workshop are being coordinated - February target.
- RI work plan field change/clarification sheets attached.

Document Review Look-Ahead

Document	Regulator Review Start	Duration
RCBRA Draft B – Volume 2 (Human Health)	November 25, 2008	January 23, 2009
100-N Area Orphan Sites Evaluation Report	April 2009	45 days

Attachment 10

(10)

Tri-Party Adjustments to the *Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River* (DOE/RL-2008-11, Rev. 0), November 19, 2008

On November 19, 2008 a meeting was held in the WCH offices to discuss the results of sediment mapping reconnaissance efforts being conducted as part of the *Remedial Investigation for Hanford Site Releases to the Columbia River* (DOE/RL-2008-11). A second discussion regarding the upcoming fish sampling campaign was also discussed. Attendees included WCH staff, Jamie Zeisloft (RL), Laura Buelow (EPA), John Price (Ecology), Damon Delistraty (Ecology, via phone), Brett Tiller (EAS), Karl Kasper (Woodard & Curran, via phone) and Jane Sexton (Integral Consulting Inc, via phone).

Results of the sediment mapping efforts (Section 2.2.1 Fine Grained Sediment Survey in the SAP contained in the Work Plan) were presented as in a series of updated maps that utilized Figures 2-2 through 2-20 in the SAP as the base map layer. Utilizing these maps that had been generated by Woodard & Curran, another set of maps showing the results of near shore sediment observations combined with sonar survey mapping results in deeper waters, and a draft variation of Tables 2-2 through 2-6 from the SAP it was possible to review proposed adjustments to the sample locations identified in the approved Work Plan (DOE/RL-2008-11). Each line item in these tables (representing different sample types for sediment) was reviewed, adjustments confirmed, location changes discussed, and proposed eliminations or additions reviewed and approved. At the completion of these discussions it was agreed that an updated set of these tables and maps would be produced and presented at the next Unit Managers meeting to document regulatory concurrence with the scope changes that had been made. These attachments are included. Note: The table updates include all sample types (e.g., fish, surface water, pore water, etc.) to be comprehensive and reflect all changes made to date.

The second discussion concerned clarifications with regard to the timing and collection of fish samples as defined in Section 2.4.4 of the SAP. EPA guidance provided by Laura Buelow (EPA) suggested that due to the timing associated with approval of the Work Plan in early October and the subsequent award of the contract to perform the fishing that only fishing for whitefish via electrofishing could be completed in the January/February 2009 timeframe. Other concerns such as lipid content and the avoidance of spawning time frames for some species will drive the collection of carp, sucker, walleye, bass, and sturgeon to the July through September 2009 timeframe via electrofishing, hook and line, or long line methods. (See the attached table for additional information from the WA Department of Fish and Wildlife which was provided by Laura Buelow.) Should the use of electrofishing be desired during this timeframe it will be necessary to do a "formal consultation" with the National Oceanographic and Atmospheric Administration (NOAA) to obtain approval. The suggestion that this consultation take place in June 2009 was discussed. These changes to the proposed sampling period modify the timeframes shown in Table 4-14 of the Work Plan. In particular for sturgeon it was noted that a series of workshops will be held in early 2009 to discuss and refine the approach documented in the work plan. These potential changes will be documented in a future Unit Managers meeting.

Other changes made to the Work Plan scope such as offsets associated with sample locations as determined at the time of sampling, editorial changes made to update text inconsistencies found in the document, and alternations made as a result of ongoing discussions will continue to be

documented via emails with the Tri-Parties or discussions at status meetings, and will be documented via the UMM as needed. An example of this is the inadvertent lack of radionuclide analyses for the sediment core samples from the Priest Rapids Dam location. This was discussed with EPA on 12/12/08 and will be included with the analytical requirements.

Information from Paul Hoffarth, WA Department of Fish and Wildlife
November 19, 2008

Species	**Spawning time**	**Common angling times**
Sturgeon	June-July	Year-round, May to July most common Sept-Oct still very popular
Carp	Late spring	Commercial harvest late spring
Suckers	April- mid-June	Incidental harvest, usually with bass
Walleye	March-April	Year-round March-Oct most common
Whitefish	Sept-Dec	Nov-early March
Smallmouth bass	April-May	March-Sept

From this and referring to the EPA guidance, EPA recommended sampling whitefish in January to February and the rest of the species from July to September, preferably when the river stage is low.

Attachment 11

(17)

Proposed Sampling and Analytical Plan Summary for the Remedial Investigation of Hanford Site Releases to the Columbia River (DOE/RL-2008-11)

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-2	OCI	Fish[2]	See Note 1	Wanapum Dam Pool	KH-FS1 to KH-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Sturgeon samples will be taken from Wanapum Dam Pool.
Figure 2-2	OCI	Soil	Grab	Wanapum Dam Pool soil	WP-1S to WP-10S	Limited	All	-	-	-	-	Random/ Stratified	0-0.5 ft	Surface soil samples will be taken from an island above Wanapum Dam (TBD). The samples will supplement previous sampling events and provide additional data for ecological and human evaluations. The samples will be collected from a random/stratified grid.
Figure 2-2	OCI	Surface Water	Grab	Wanapum Dam Pool	WP-1SW to WP-2SW (2 sample in spring, 2 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Upriver/background SW samples will be collected from Wanapum Dam (Pool). Limited to two samples SW should be well mixed and uniform. Used to augment existing data. Two samples will be collected in the spring, and two will be collected in the fall.
Figure 2-2	OCI	Sediment, Shoreline	Grab	Wanapum Dam Pool	WP-1SSD to WP-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Upriver/background sediment samples will be collected from the lower riparian zone to provide background data for site characterization and the impacts to ecological receptors and humans.
Figure 2-2	OCI	Sediment, Shallow	Ponar	Wanapum Dam Pool	WP-1SD to WP-6SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Upriver/background shallow sediment samples will be collected. Locations to be determined after fine-grained sediment survey.
Figure 2-3	OCI	Sediment, Shallow	Ponar	Priest Rapids Dam Pool	PRD-1SD to PRD-18SD	Based on EAS, set on first transect	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Upriver/background shallow sediment samples will be collected. Locations to be determined after fine-grained sediment survey. Eighteen samples to develop robust 95% UCL values.
Figure 2-3	OCI	Sediment, Shoreline	Grab	Below Priest Rapids Dam	SH-1SSD to SH-3SSD	Limited	All	-	-	SH-3SSD	1	Random/ Stratified	0 - 0.3 ft	Upriver/background sediment samples will be collected from the lower riparian zone to provide background data for site characterization and the impacts to ecological receptors and humans.
Figure 2-3	OCI	Surface Water	Grab	Priest Rapids Dam Pool	PRD-1SW to PRD-2SW (2 sample in spring, 2 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Upriver/background SW samples will be collected from Priest Rapids Dam (Pool). Limited to two samples SW should be well mixed and uniform. Used to augment existing data. Two samples will be collected in the spring, and two will be collected in the fall.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-3	OCI	Surface Water	Grab	Priest Rapids Dam Pool	PRD-3SW to PRD-4SW (2 sample in spring, 2 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Upriver/background SW samples (moving water) will be collected. Limited to two samples SW should be well mixed and uniform. Used to augment existing data. Two samples will be collected in the spring, and two will be collected in the fall.
Figure 2-3	OCI	Fish[2]	See Note 1	Priest Rapids Dam Pool	WP-FS1 to WP-FS25	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from upriver of the Priest Rapids Dam. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-3	OCI	Core, Deep (4-inch diameter)	Drill Rig	Priest Rapids Dam Pool	PRDC-1SD to PRDC-20SD (1 core subdivided. into approx. 20 sed. samples)[4]	Place closer to right bank where conditions are best based on EAS comment	On-Site	-	-	-	-	Focused	0 - Refusal (8 in subsamples)	Based on the findings of the sonar survey, single core will be collected in area of deep sediment. Estimate 15 feet of sediment, one sample every eight inches. Estimated sample mass of approximately 2,400 grams per sample interval. Used to supplement existing core data.
Figure 2-4	Reactor Area	Pore Water, GU	Grab	Reactor B GW Plume	RB-1PW to RB-6PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-4	Reactor Area	Pore Water, Screening	Grab	Reactor B GW Plume	RB-7PW to RB-42PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-4	Reactor Area	Sediment, GU	Ponar	Reactor B GW Plume	RB-1SD to RB-6SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-4	Reactor Area	Surface Water, GU	Grab	Reactor B GW Plume	RB-1SW to RB-6SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.

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Sample Description														
Figure	**Designation**	**Sample Type**	**Collection Method**	**Sampling Location**	**Temporary Sample ID**	**Adjustments**	**Confirmed Location**	**Eliminated** Notes	**Eliminated** #	**Add** Notes	**Add** #	**Sample Design**	**Sample Depth**	**Rationale**
Figure 2-4	Reactor Area	Sediment, Shallow	Ponar	Reactor B Left Side Sediment	RBLS-1SD to RBLS-10SD	Eliminate All	-	All	10	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, 10 samples will be collected on a sample grid on the far shore directly down river of Coyote Island as a potential depositional area for 100-B/C reactor releases.
Figure 2-4	Reactor Area	Sediment, Shoreline	Grab	Reactor B Left Side Sediment	RBLS-1SSD to RBLS-10SSD	Relocated below Island	All	-	-	-	10	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected on a sample grid on the far shore upriver of Coyote Island as a potential depositional area for 100-B/C reactor releases.
Figure 2-4	Reactor Area	Sediment, Shoreline	Grab	Reactor B Left Side Shoreline Sediment	RBLS-11SSD to RBLS-20SSD	All New	-	-	-	Change from shallow Sed to Shoreline	10	Random/ Stratified	0 - 0.3 ft	Relocate and changed to shoreline sediment samples
Figure 2-4	Reactor Area	Sediment, Deep	Ponar	Reactor B Trench	RB-6SD	No Sediment	-	All	1	-	-	Random/ Stratified	0 - 0.3 ft	One deep sediment sample will be taken from 100-B/C Hole. The upper 4 inches will be used for evaluating ecological impacts.
Figure 2-4	Reactor Area	Surface Water	Grab	Reactor B Left Side Slough Surface Water	RBLS-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One SW sample will be collected from far shore to augment near shore RCBRA SW sampling.
Figure 2-4	Reactor Area	Fish[2]	See Note 1	100BC Hole	RB-FS1 to RB-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from the 100-B/C Hole. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-4	Reactor Area	Core, Shallow (2-inch diameter)	Vibracore	Reactor B Inlet Structures	RBC-1SD to RBC-6SD (1 core location subdivided. into approx. 6 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	One core will be completed within the water intake trench/structure. Samples will be divided into 6 one foot samples (2-in core = ~ 600 gms per 1 foot). Evaluate historic deposition of Hanford contaminates (e.g., sediment trap).
Figure 2-5	Reactor Area	Pore Water, GU	Grab	Reactor K GW Plume	RK-1PW to RK-6PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-5	Reactor Area	Pore Water, Screening	Grab	Reactor K GW Plume	RK-7PW to RK-42PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-5	Reactor Area	Sediment, GU	Ponar	Reactor K GW Plume	RK-1SD to RK-6SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-5	Reactor Area	Surface Water, GU	Grab	Reactor K GW Plume	RK-1SW to RK-6SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Six samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-5	Reactor Area	Sediment, Shallow	Ponar	Reactor K Left Side Sediment	RKLS-1SD to RKLS-10SD	Eliminate All	-	All	10	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, ten samples will be collected on a sample grid on the far shore across from and downriver of 100-K as a potential depositional area for reactor releases.
Figure 2-5	Reactor Area	Sediment, Shoreline	Grab	Reactor K Left Side Shoreline Sediment	RKLS-1SSD to RKLS-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected on a sample grid on the far shore downriver of 100-K as a potential depositional area for 100-K reactor releases.
Figure 2-5	Reactor Area	Fish[2]	See Note 1	100K Hole	RK-FS1 to RK-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from the 100-K Hole. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-5	Reactor Area	Sediment, Shoreline	Grab	Reactor K Left Side Shoreline Sediment	RKLS-11SSD to RKLS-20SSD	All New	All	-	-	Change from shallow Sed to Shoreline	10	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected on the far shore across and downriver of 100-N as a potential depositional area for reactor releases.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-5	Reactor Area	Core, Shallow (2-inch diameter)	Vibracore	Reactor K north Inlet Structures	RKC-1SD to RKC-6SD (1 core location subdivided. into approx. 6 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	One core will be completed within the water intake trench/structure. Samples will be divided into 6 one foot samples (2-in core = ~ 600 gms per 1 foot). Used to evaluate historic deposition of Hanford contaminants (e.g., sediment trap).
Figure 2-5	Reactor Area	Core, Shallow (2-inch diameter)	Vibracore	Reactor K south Inlet Structures	RKC-7SD to RKC-12SD (1 core location subdivided. into approx. 6 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	One core will be completed within the water intake trench/structure. Samples will be divided into 6 one foot samples (2-in core = ~ 600 gms per 1 foot). Used to evaluate historic deposition of Hanford contaminants (e.g., sediment trap).
Figure 2-6	Reactor Area	Pore Water, GU	Grab	Reactor N GW Plume	RN-1PW to RN-6PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area. Radionuclides for analysis consist of Sr-90.
Figure 2-6	Reactor Area	Pore Water, Screening	Grab	Reactor N GW Plume	RN-7PW to RN-42PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-6	Reactor Area	Sediment, GU	Ponar	Reactor N GW Plume	RN-1SD to RN-6SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-6	Reactor Area	Surface Water, GU	Grab	Reactor N GW Plume	RN-1SW to RN-6SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-6	OCI	Sediment, Shallow	Ponar	Saddle Mountain Wasteway	SM-1SD to SM-3SD	Eliminate All	-	All	3	-	-	Focused	0 - 0.3 ft	Three samples will be collected on the far shore down river of 100-N and at Saddle Mountain Wasteway to evaluate potential reactor depositions as well as other contributing influences.

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Sample Description														
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	Rationale
Figure 2-6	Reactor Area	Sediment, Shoreline	Grab	Reactor N Left Side Shoreline Sediment	RNLS-1SSD to RNLS-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	
Figure 2-6	OCI	Surface Water	Grab	Saddle Mountain Wasteway	SM-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples (one each in spring and fall) to augment the evaluation of other contributing influences on the far (left) shore across and downriver from Area 100-N at the Saddle Mountain Wasteway.
Figure 2-6	Reactor Area	Fish[2]	See Note 1	100N Hole	RN-FS1 to RN-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples from the 100-N Hole. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-6	Reactor Area	Core, Shallow (2-inch diameter)	Vibracore	Reactor N Inlet Structures	RNC-1SD to RNC-6SD (1 core location subdivided. into approx. 6 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	One core will be completed within the water intake trench/structure. Samples will be divided into 6 one foot samples (2-in core = ~ 600 gms per 1 foot). Used to evaluate historic deposition of Hanford contaminates (e.g., sediment trap).
Figure 2-7	Reactor Area	Pore Water, GU	Grab	Reactor D GW Plume	RD-1PW to RD-5PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-7	Reactor Area	Pore Water, Screening	Grab	Reactor D GW Plume	RD-6PW to RD-35PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-7	Reactor Area	Sediment, GU	Ponar	Reactor D GW Plume	RD-1SD to RD-5SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-7	Reactor Area	Surface Water, GU	Grab	Reactor D GW Plume	RD-1SW to RD-5SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-7	Reactor Area	Sediment, Shallow	Ponar	Reactor D downriver Sediment	RDD-1SD to RDD-10SD	Limited sediment; relocated	-	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, two samples will be collected from the shallow area downriver and adjacent to D Island; another two samples will be collected from the shallow area downriver and adjacent to Island 2; the remaining samples will be collected from the shallow area on the far (left) side of Island 3.
Figure 2-7	Reactor Area	Sediment, Shallow	Ponar	Reactor D downriver Sediment	RDD-11SD to RDD-14SD	Limited Sediment	-	RDD-15 to RDD-20	6	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, ten samples will be collected on the far (left) shore across from Island 3 and in the shore area of WB Hole 1
Figure 2-7	Reactor Area	Sediment, Shoreline	Grab	Reactor D downriver Shoreline Sediment	RDD-1SSD to RDD-10SSD	Limited	All	-	-	-	-	Random/ Stratified.	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected. Two samples will be collected from the shallow area upriver and adjacent to D Island; two more samples will be collected from the shallow area on the near shore (right) downriver from D Island; two samples will be collected from the shallow area upriver and adjacent to Island 2; the remaining samples will be collected upriver and adjacent to Island 3 on the near shore side.
Figure 2-7	Reactor Area	Surface Water	Grab	Reactor D downriver Surface Water	RDD-1SW to RDD-3SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Three surface water samples will be taken between the upriver portion of Island 3 and the far (left) shore to augment near shore RCBRA sampling.
Figure 2-7	Reactor Area	Fish[2]	See Note 1	100D Hole	RD-FS1 to RD-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from the 100-D Hole. Number and type of fish may vary depending on availability of fish at time of sampling.

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Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-7	Reactor Area	Fish[2]	See Note 1	WB Hole 1	WB1-FS1 to WB1-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from WB Hole 1. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-7	Reactor Area	Soil	Grab	Island 3 soil	I3-1S to I3-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Surface soil samples will be randomly taken from Island 3 from a 10 cell grid. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations.
Figure 2-7	Reactor Area	Core, Shallow (2-inch diameter)	Vibracore	Reactor D Inlet Structures	RDC-1SD to RDC-6SD (1 core location subdivided. into approx. 6 sed. samples)[4]	None	-	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	One core will be completed within the water intake trench/structure. Samples will be divided into 6 one foot samples (2-in core = ~ 600 gms per 1 foot). Used to evaluate historic deposition of Hanford contaminants (e.g., sediment trap).
Figure 2-8	Reactor Area	Pore Water, GU	Grab	Reactor H GW Plume	RH-1PW to RH-6PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area. Radionuclides for analysis consist of Sr-90.
Figure 2-8	Reactor Area	Pore Water, Screening	Grab	Reactor H GW Plume	RH-7PW to RH-42PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-8	Reactor Area	Sediment, GU	Ponar	Reactor H GW Plume	RH-1SD to RH-6SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-8	Reactor Area	Surface Water, GU	Grab	Reactor H GW Plume	RH-1SW to RH-6SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-8	Reactor Area	Sediment, Shallow	Ponar	Locke Island Sediments	LI-1SD to LI-10SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, four samples will be collected from the shallow area upriver and adjacent to Locke Island and across from area 100-H ; the remaining six samples will be collected from the shallow area on the far (left) side of the river. Three samples will be on the far (left) side of the river across from the downriver half of Locke Island with the remaining three continuing downriver of Locke Island along the same side.
Figure 2-8	Reactor Area	Sediment, Shoreline	Grab	Locke Island Sediment west side	LI-11SSD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Sediment sample was added on the west side of Locke Island.
Figure 2-8	Reactor Area	Sediment, Shallow	Ponar	Native American Cultural Site (White Bluffs east side of River)	WBT-1SD to WBT-10SD	Eliminate All	-	All	10	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, ten samples will be collected from a shallow area on the far (left) shore across from White Bluffs Townsite and at the WB-10 Wasteway.
Figure 2-8	Reactor Area	Sediment, Shoreline	Grab	Native American Cultural Site (White Bluffs east side of River)	WBT-1SSD to WBT-10SSD	All New	-	-	-	Change from shallow sed to shoreline	10	Random/ Stratified	0 - 0.3 ft	Due to lack of shallow sediment shoreline sediments added.
Figure 2-8	OCI	Sediment, Shallow	Ponar	WB-10 Wasteway	WBT-11SD to WBT-13SD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Three samples will be collected from the shallow sediments downriver of the WB-10 Wasteway to evaluate other contributing influences.
Figure 2-8	Reactor Area	Sediment, Shoreline	Grab	Reactor H Island Shoreline Sediment	RH-1SSD to RH-10SSD	No sed on Island 5, move to upriver end of Locke Is	All	-	-	-	-	Random/ Stratified	0 - 1 ft	Based on an ecological habitat survey, ten samples will be collected. Five samples will be collected from the shallow area upriver and adjacent to Island 5; another five samples will be collected from the shallow area on the downriver portion of Island 5.
Figure 2-8	Reactor Area	Surface Water	Grab	Reactor H Surface Water	RH-6SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken between Locke Island and the near (right) shore to augment near shore RCBRA sampling.
Figure 2-8	OCI	Surface Water	Grab	Native American Cultural Site (White Bluffs east side of River)	WBT-1SW (1 sample in spring, 1 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Two surface water samples will be taken (one each in spring and fall) near the far (left) shore across from White Bluffs Township, near the WB-10 Wasteway, to augment near shore RCBRA sampling.

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Sample Description														
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	Rationale
Figure 2-8	Reactor Area	Fish[2]	See Note 1	WB Hole 2	WB2-FS1 to WB2-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from WB Hole 2. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-9	Reactor Area	Soil	Grab	Locke Island soil	LI-1S to LI-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Ten surface soil samples will be randomly taken from Locke Island using a 10 cell grid to minimize cultural impacts. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations.
Figure 2-9	Reactor Area	Pore Water, GU	Grab	Reactor F GW Plume	RF-1PW to RF-5PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-9	HT	Pore Water, Screening	Grab	Reactor F GW Plume	RF-6PW to RF-35PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-9	HT	Sediment, GU	Ponar	Reactor F GW Plume	RF-1SD to RF-5SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-9	Reactor Area	Surface Water, GU	Grab	Reactor F GW Plume	RF-1SW to RF-5SW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area.
Figure 2-8	White Bluffs Townsite	Sediment, Shallow	Ponar	Bottom of H-Slough Shallow Sediment	HT-1SD to HT-10SD	All New	-	-	-	New Samples	10	Random/ Stratified	0 - 0.3 ft	New area of shallow sediment not previously identified.

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-9	Reactor Area	Sediment, Shallow	Ponar	White Bluffs Townsite Left Side Sediments	HT-1SD	No sediment in area	-	HT-1SD	1	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, one sample will be collected from the shallow area on the far (left) side and downriver of Island 10.
Figure 2-9	HT	Sediment, Shoreline	Grab	Reactor F	RFLS-1SSD to RFLS-5SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five shoreline sediement samples will be collected.
Figure 2-9	HT	Sediment, Shallow	Ponar	Reactor F Left Side Sediments	RFLS-1SD to RFLS-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from the shallow area on the far (left) side of the river and downriver of Island 8 extending downriver with the last sample across from Island 9.
Figure 2-9	Reactor Area	Sediment, Shallow	Ponar	White Bluffs downriver Sediments	WBD-1SD to WBD-10SD	Eliminated due to lack of sediment	-	Eliminated	10	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, ten samples will be collected from the shallow area adjacent to Area 100-F.
Figure 2-9	Reactor Area	Soil	Grab	White Bluffs island soil	WB-1S to WB-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Ten surface soil samples will be randomly taken from the island across from White Bluffs townsite using a 10 cell grid to minimize cultural impacts. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations.
Figure 2-9	Reactor Area	Sediment, Shallow	Ponar	Reactor F downriver Sediments	RFD-1SD to RFD-2SD	Limited	-	RFD-3SD to 10SD	8	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, samples will be collected from the shallow area between the upriver end of Island 8 and the near (right) shore.
Figure 2-9	HT	Sediment, Shoreline	Grab	Hanford Townsite Shoreline Sediments	HT-1SSD to HT-2SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, two samples will be collected from the riparian area upriver and adjacent to Island 10.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-9	Reactor Area	Sediment, Shoreline	Grab	Reactor F downriver Shoreline Sediments	RFD-1SSD to RFD-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from riparian areas; three just upriver of Island 8; one sample between the upriver portion of Island 8 and the near (right) shore; two downriver and adjacent to Island 8; two upriver of Island 9 and two adjacent to Island 9 on its near (right) shore side.
Figure 2-9	Island 9	Sediment, Shoreline	Grab	Island 9	IS9-1SSD to IS9-4SSD	New Samples	All	-	-	IS9-1SSD to 4SSD	4	Random/ Stratified	0 - 0.3 ft	New samples located on Island #9
Figure 2-9	Island 10	Sediment, Shoreline	Grab	Island 10	IS10-1SSD to 3SSD	New Samples	All	-	-	IS10-1SSD to 3SSD	3	Random/ Stratified	0 - 0.3 ft	New samples located on Island #10
Figure 2-9	HT	Surface Water	Grab	Island 8 Surface Water	IS8-1SW to IS8-5SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Five surface water samples taken between Island 8 and Island 9 and the near (right) shore to augment near shore RCBRA sampling.
Figure 2-10	HT	Sediment, Shoreline	Grab	Hanford Townsite Shoreline Sediments	HT-3SSD to HT-10SSD	EAS confirmed sed avail upriver on right shore from HT	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, eight samples will be collected.
Figure 2-10	HT	Sediment, Shallow	Ponar	Hanford Townsite Left Side Sediments	HT-11SD to HT-14SD	Relocated	All	-	-	-	-	Focused	0 - 0.3 ft	Based on sonar survey results, four samples will be collected from the shallow area; one sample from the near shore in front of the Hanford Townsite; one sample from the near (right) shore just downriver from river mile 384; two samples from the far (left) shore around river mile 364.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-10	HT	Fish[2]	See Note 1	HTS Hole 1	HTS1-FS1 to HTS1-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples from HTS Hole 1 will be collected. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-10	HT	Pore Water, GU	Grab	Hanford Townsite Tritium GW Plume	HT-1PW to HT-5PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to tritium discharge area.
Figure 2-10	HT	Pore Water, Screening	Grab	Hanford Townsite Tritium GW Plume	HT-6PW to HT-35PW[8]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area. Samples will be analyzed for tritium only.
Figure 2-11	HT	Sediment, GU	Ponar	Hanford Townsite Tritium GW Plume	HT-1SD to HT-5SD[7]	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to tritium discharge area.
Figure 2-11	HT	Surface Water, GU	Grab	Hanford Townsite Tritium GW Plume	HT-1SW to HT-5SW[7]	Opportunistic	On-Site	--	--	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to tritium discharge area.
Figure 2-11	HT	Sediment, Shoreline	Grab	Island 11 Shoreline Sediment	IS11-1SSD to IS11-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area; samples are from the upriver end of Island 11 just downriver from the WB-5 Wasteway.
Figure 2-11	HT	Sediment, Shoreline	Grab	Savage Island Shoreline Sediment	SI-1SSD to SI-3SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Samples will be collected from the riparian area on the left shore at Savage Island

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Sample Description														
Figure	**Designation**	**Sample Type**	**Collection Method**	**Sampling Location**	**Temporary Sample ID**	**Adjustments**	**Confirmed Location**	**Eliminated**		**Add**		**Sample Design**	**Sample Depth**	**Rationale**
								Notes	**#**	**Notes**	**#**			
Figure 2-11	HT	Sediment, Shallow	Ponar	Depositional Area top of Savage Island	SI-1SD to SI-5SD	Moved SI-3SD, 4SD, & 5SD lower on island	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from the shallow area on the far (left) shore just upriver from river mile 359.
Figure 2-11	HT	Sediment, Shallow	Ponar	Savage Island	SI-6SD to SI-10SD	No survey done in this area, opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Five shallow sediment samples have been added behind Savage Island.
Figure 2-11	HT	Sediment, Shallow	Ponar	Right side across from head of Savage Island	SI-11SD to SI-12SD	New area of sediment identified	All	-	-	New Samples	2	Random/ Stratified	0 - 0.3 ft	Two shallow sediment samples have been added across from head of Savage Island.
Figure 2-11	HT	Sediment, Shallow	Ponar	Island 11 Sediment	IS11-1SD to IS11-5SD	Eliminated; no sediment identifed	-	All	5	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from the shallow area from the downriver end of Island 11 across from Ringold Springs.
Figure 2-11	OCI	Sediment, Shallow	Ponar	WB-5 Wasteway	WBW-1SD to WBW-3SD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Three samples will be collected from the shallow area on the far (left) shore just upriver from river mile 356 in the WB-5 Wasteway to evaluate other contributing influences.
Figure 2-11	OCI	Surface Water	Grab	WB-5 Wasteway	WBW-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples will be taken (one each in spring and fall) at the WB-5 Wasteway to augment near shore RCBRA sampling and evaluate other contributing influences.
Figure 2-11	HT	Sediment, Shoreline	Grab	Ringold Recreational	RG-1SSD to RG-10SSD	New Samples	All	-	-	New Samples	10	Random/ Stratified	0 - 0.3 ft	Ten new samples will be collected from shoreline sediment in the Ringold Recreational Area.
Figure 2-11	HT	Surface Water	Grab	Depositional Area top of Savage Island	SI-2SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken at the upriver end of Savage Island to augment near shore RCBRA sampling.
Figure 2-11	OCI	Surface Water	Grab	Island 11 Sloughs Surface Water	IS11-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken at the Island 11 Sloughs to augment near shore RCBRA sampling.
Figure 2-11	HT	Surface Water	Grab	Ringold Recreational	RG-3SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken between Ringold Springs and the WB-5 Wasteway to augment near shore RCBRA sampling.

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-11	HT	Fish[2]	See Note 1	HTS Hole 2	HTS2-FS1 to HTS2-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from HTS Hole 2. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-12	HT	Sediment, Shoreline	Grab	Island 12 Shoreline Sediment	IS12-1SSD to IS12-10SSD	Limited	-	–	–	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area. Samples taken include five samples on the upriver end of Island 12 and five samples near the middle and on the near (right) shore side of Island 12.
Figure 2-12	HT	Sediment, Shoreline	Grab	Homestead Island	HMSTD-1SSD to HMSTD-3SSD and HMSTD-6SSD to HMSTD-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area. Samples taken include five samples near the upriver end of Homestead Island and five samples near the downriver end of Homestead Island.
Figure 2-12	HT	Sediment, Shoreline	Grab	Left Bank near Homestead Island	HMSTD-4SSD to HMSTD-5SSD	Relocate	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Relocate two shoreline sediment samples to left shore
Figure 2-12	HT	Sediment, Shallow	Ponar	Homestead Island	HMSTD-1SD to HMSTD-5SD	Limited	All	-	-	–	–	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from the shallow area between the near (right) shore and Homestead Island.
Figure 2-12	HT	Sediment, Shallow	Ponar	Island 13	IS13-1SD to IS13-5SD	Limited	All	-	-	–	–	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from the shallow area just downriver on the near (right) shore side of Island 13.
Figure 2-12	OCI	Sediment, Shoreline	Grab	Ringold Irrigation Return	RG-11SSD to RG-13SSD	Opportuinistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on Trustee comments, these samples will supplement previous sampling events and provide additional data for HHRA. The samples will be collected from a 10 cell random/stratified grid.
Figure 2-12	OCI	Sediment, Shallow	Ponar	PE 16.4 Wasteway	PE-1SD to PE-3SD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Three samples will be collected from shallow sediment downriver of the PE 16.4 Wasteway area to evaluate other contributing influences.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-12	OCI	Surface Water	Grab	Ringold Irrigation Return	RG-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples (one each in spring and fall) will be taken at the Ringold Irrigation Return to augment near shore RCBRA sampling and evaluate other contributing influences.
Figure 2-12	OCI	Surface Water	Grab	PE 16.4 Wasteway	PE-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples (one each in the spring and fall) will be taken at the PE 16.4 Wasteway to augment near shore RCBRA sampling and evaluate other contributing influences.
Figure 2-12	HT	Fish[2]	See Note 1	Ringold	RG-FS1 to RG-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples from Ringold will be collected. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-12	HT	Soil	Grab	Homestead Island soil	HI-1S to HI-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Surface soil samples will be taken from Homestead Island. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations. The samples will be collected from a 10 cell random/stratified grid.
Figure 2-13	HT	Sediment, Shoreline	Grab	Island 14	IS14-1SSD to IS14-9SSD	Limited	All	IS14-10SSD	1	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, samples will be collected from the riparian area; samples are from between the far (left) shore and Island 14.
Figure 2-13	HT	Sediment, Shoreline	Grab	Island 15	IS15-1SSD to IS15-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area; samples are from the upriver end of Island 15.
Figure 2-13	HT	Sediment, Shoreline	Grab	Wooded Island	WI-1SSD to WI-12SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area; five samples are from the upriver end of Wooded Island and five samples are from the mid-area of the island on the far (left) shore side.
Figures 2-13 and 2-12	HT	Sediment, Shallow	Ponar	Island 14	IS14-1SD to IS14-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediment between Island 14 and the near (right) shore.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-13	HT	Sediment, Shallow	Ponar	Island 15	IS15-1SD to IS15-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediment downriver of Island 15 on the far (left) shore.
Figure 2-13	HT	Sediment, Shoreline	Grab	Island 16	IS16-1SSD to IS16-4SSD	New Samples	All	-	-	New Samples	4	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, three new samples will be collected from Island 16.
Figure 2-13	HT	Sediment, Shallow	Ponar	Wooded Island	WI-1SD to WI-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediment between Wooded Island and the near (right) shore.
Figure 2-13	HT	Surface Water	Grab	Wooded Island	WI-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken adjacent to Wooded Island to augment near shore RCBRA sampling.
Figure 2-13	HT	Fish[2]	See Note 1	Taylor Flats	TF-FS1 to TF-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from Taylor Flats. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-13	HT	Soil	Grab	Wooded Island soil	WI-1S to WI-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Surface soil samples will be taken from Wooded Island. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations. The samples will be collected from a 10 cell random/stratified grid.
Figure 2-14	300 Area	Pore Water, GU	Grab	300 Area GW Plume (PCE, tritium, U)	300A-1PW to 300A-6PW[7]	Opportunistic	On-Site	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to 300 Area VOC/uranium discharge.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-14	300 Area	Pore Water, Screening	Grab	300 Area GW Plume (PCE, tritium, U)	300A-7PW to 300A-42PW[8]	Limited	All	-	-	-	-	Focused	1 ft below mudline	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Thirty samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to reactor area. Metals will include elemental uranium only.
Figure 2-14	300 Area	Sediment, GU	Ponar	300 Area GW Plume (PCE, tritium, U)	300A-1SD to 300A-6SD[7]	Limited	All	-	-	-	-	Focused	0 - 0.3 ft	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to 300 Area VOC/uranium discharge.
Figure 2-14	300 Area	Surface Water, GU	Grab	300 Area GW Plume (PCE, tritium, U)	300A-1SW to 300A-6SW[7]	Limited	All	-	-	-	-	Focused	1 ft above sediment surface	Focus to characterize GW plume discharge to river. Major use will be ecological impacts. Five samples are budgeted; the actual number will depend on results of pore water sampling in the hyporheic zone adjacent to 300 Area VOC/uranium discharge.
Figure 2-14	300 Area	Sediment, Shoreline	Grab	300 Area Island (Johnson Island)	300ISL-1SSD to 10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, ten samples will be collected from the riparian area; three samples are from the upriver end of 300 Island; three samples are from the upper third of the island; the remaining samples from the mid-area of the island on the far (left) shore side.
Figure 2-14	300 Area	Sediment, Shallow	Ponar	300 Area Left Side	300LS-1SD to 300LS-5SD	-	-	All	5	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediment on the far (left) shore across from 300 Island.
Figure 2-14	300 Area	Sediment, Shoreline	Grab	300 Area Left Side (Island 18)	300LS-1SSD to 300LS-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, samples will be collected from shallow sediment on the far (left) shore across from 300 Island.
Figure 2-14	300 Area	Sediment, Shoreline	Grab	Potholes Canal Wasteway	PC-1SSD to PC-3SSD	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, samples will be collected from the riparian area.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-14	300 Area	Sediment, Shallow	Ponar	Potholes Canal Wasteway	JSI-1SD to JSI-10SD	Limited	All	-	-	All	10	Random/ Stratified	0 - 0.3 ft	New samples added in the vicinity of Potholes Canal Wasteway to evaluate both biota and human exposure to shallow sediment
Figure 2-14	OCI	Sediment, Shallow	Ponar	Esquatzel Coulee Wasteway	EC-1SD to EC-3SD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Three samples will be collected from shallow sediment downriver of the Esquatzel Coulee Wasteway area to evaluate other contributing influences.
Figure 2-14	OCI	Surface Water	Grab	Potholes Canal Wasteway	PC-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples (one each in the spring and fall) will be taken at the Potholes Canal Wasteway to augment near shore RCBRA sampling and evaluate other contributing influences.
Figure 2-14	OCI	Surface Water	Grab	Esquatzel Coulee Wasteway	EC-1SW (1 sample in spring, 1 sample in fall)	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Two surface water samples (one each in the spring and fall) will be taken at the Esquatzel Coulee Wasteway to augment near shore RCBRA sampling and evaluate other contributing influences.
Figure 2-14	HT	Fish[2]	See Note 1	300A Hole 1	300A1-FS1 to 300A1-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from 300A Hole 1. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-14	300 Area	Fish[2]	See Note 1	300A Hole 2	300A2-FS1 to 300A2-FS5	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from 300A Hole 2. Number and type of fish may vary depending on availability of fish at time of sampling.

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-14	300 Area	Soil	Grab	Johnson Island soil	JI-1S to JI-10S	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Surface soil samples will be taken from Johnson Island. The samples will supplement previous sampling events and provide additional data for ecological and human evaluations. The samples will be collected randomly from a 10 cell grid.
Figure 2-14	300 Area	Core, Shallow (2-inch diameter)	Vibracore	300 Area downriver	300DC-1SD to 300DC-12SD (4 core locations; approx. 3 sed. samples per core)[4]	All 4 cores relocated based on sonar survey	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	Four locations to characterize: both sides of river above Johnson Island; adjacent to (right side) of Johnson Island; downriver of Johnson Island (left side); downriver of Potholes Canal/Pasco Wasteway. These were placed at the head of the Wallula Pool to evaluate potential depositional area.
Figure 2-15	300 Area	Sediment, Shallow	Ponar	300 Area	300D-1SD to 300D-5SD	Limited sediment area; reduce to 5 samples	All	300D-6SSD to 10SSD	5	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, samples will be collected from shallow areas near the far (left) shore just downriver from river mile 341.
Figure 2-15	300 Area	Sediment, Shoreline	Grab	300 Area downriver	300D-1SSD to 5SSD	Limited	All	-	-	300D-1SSD to 5SSD	5	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, five samples will be collected from the riparian area; two samples are from the upriver end of the Island at river mile 342; one sample is from the lower end of that island; one sample is from the upriver end of the island across from the Richland pump House; and the remaining sample is from the upriver end of Nelson island.
Figure 2-15	300 Area	Sediment, Shoreline	Grab	Leslie Grove City Park (5 replicate)	LG-1SSD to 5SSD	Limited shoreline sed near Leslie Grove; grid to be established in field	Have EAS check	-	-	-	-	MIS	0 - 0.5 ft	MIS samples will be collected from shoreline area of Leslie Grove City Park. These samples will be collected as 5 replicates.
Figure 2-15	300 Area	Soil	Grab	Gull Island soil	GI-1S to GI-10S	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.5 ft	Ten sediment samples will be randomly collected from Gull Island from a 10 cell grid.

Sample Description														
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	Rationale
Figure 2-15	Recreational	Surface Water	Grab	Leslie Grove City Park	LG-1SW	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	One surface water sample will be taken offshore from Leslie Grove City Park/Boat Launch to augment existing data.
Figure 2-15	300 Area	Core, Shallow (2-inch diameter)	Vibracore	300 Area downriver	300DC-13SD to 18SD (2 core location; approx. 3 sed. samples per core)[4]	Move one core downriver (see Fig 2-14)	On-Site	-	-	All	6	Focused	0 - Refusal (1 ft subsamples)	Characterize the sediments ~ 1/2 way between the Port of Benton and the Richland Pump House on both sides of island. Data to be used in the ecological evaluation.
Figure 2-16	OCI	Sediment, Shallow	Ponar	Yakima River	YR-1SD to YR-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediments in the Yakima River prior to its confluence with the Columbia River to evaluate other contributing influences.
Figure 2-16	OCI	Surface Water	Grab	Yakima River	YR-1SW (1 sample in spring, 1 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Two surface water samples will be taken (one each in the spring and fall) from the Yakima River to augment existing data and evaluate other contributing influences.
Figure 2-16	Recreational	Sediment, Shoreline	Grab	Howard Amon City Park	HA-1SSD to HA-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Ten sediment samples will be randomly collected from the shoreline area of Howard Amon City Park from a 10 cell grid.
Figure 2-16	Recreational	Sediment, Shallow	Ponar	Howard Amon City Park	HA-1SD to HA-5SD	New Samples	All	-	-	New Samples	5	Random/ Stratified	0 - 0.3 ft	Five shallow sediment samples have been added within Howard Amon boat ramp.
Figure 2-16	Recreational	Sediment, Shallow	Ponar	Columbia Point Marina	CPM-1SD to CPM-5SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Five sediment samples will be randomly collected from the shoreline area of Columbia Point Marina from a 5 cell grid.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-16	Recreational	Sediment, Shoreline	Grab	Bateman Island Boat Launch	BL-1SSD to BL-10SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Sediment samples will be randomly collected from the shoreline area of Bateman Island Boat Launch from a 10 cell grid.
Figure 2-16	Yakima River	Sediment, Deep	Ponar	Above confluence of Yakima and Columbia (deep Columbia River sediment)	CR-1SD	Limited	All	-	-	Moved upriver to river mile 337	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, one deep sediment sample will be collected at the confluence of Yakima and Columbia Rivers.
Figure 2-16	Yakima River	Sediment, Deep	Ponar	Below confluence of Yakima and Columbia (deep Columbia River sediment)	CR-2SD	No sediment	None	All	1	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, one deep core sample will be collected from the Columbia River (in the vicinity of river mile 333) below its confluence with the Yakima River. The upper ten inches of the core will be used to evaluate ecological impacts.
Figure 2-16	Recreational	Surface Water	Grab	Howard Amon City Park	HA-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Howard Amon City Park to augment existing data.
Figure 2-16	Recreational	Surface Water	Grab	Columbia Point Marina	CPM-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Columbia Point Marina to augment existing data.
Figure 2-16	Recreational	Surface Water	Grab	Bateman Island Boat Launch	BL-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Bateman Island Boat Launch to augment existing data.
Figure 2-16	Yakima River	Fish[2]	See Note 1	Yakima River Delta	YR-FS1 to YR-FS10	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from Yakima River Delta. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-16	Yakima River	Core, Shallow (2-inch diameter)	Vibracore	Yakima delta cores	YRC-1SD to YRC-3SD (1 core location subdivided. into approx. 3 sed. samples)[4]	Limited	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	Characterize sediments adjacent to the western shore of Bateman Island. Utilize data to evaluate historic deposition and potential ecological impacts.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-16	Yakima River (OCI)	Core, Shallow (2-inch diameter)	Vibracore	Yakima delta cores	YRC-4SD to YRC-6SD (1 core location subdivided. into approx. 3 sed. samples)[4]	Limited	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	Characterize sediments adjacent to the western shore of Bateman Island. Utilize data to evaluate historic deposition and potential ecological impacts.
Figure 2-17	McNary Dam	Sediment, Shoreline	Grab	Peninsula HMU	PHMU-1SSD to PHMU-3SSD	Limited	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, three samples will be collected from the riparian area; spaced along the Peninsula Wildlife Management Unit Area which is on the far (left) shore.
Figure 2-17	McNary Dam	Sediment, Shoreline	Grab	Toothaker HMU	THMU-1SSD to THMU-2SSD	None	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, two samples will be collected from the riparian area; spaced along the Toothaker Wildlife Management Unit Area which is on the near (right) shore.
Figure 2-17	McNary Dam	Sediment, Shoreline	Grab	Badger Island	BI-1SSD to 2SSD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, two samples will be collected from the riparian area on Badger Island.
Figure 2-17	McNary Dam	Sediment, Shallow	Ponar	Paper Mill Channel	PM-1SD to PM-2SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, two samples will be collected from shallow sediments in the Paper Mill Channel to evaluate potential future dredging impacts on upland human exposure.
Figure 2-17	McNary Dam	Sediment, Shallow	Ponar	Toothaker HMU	THMU-1SD to THMU-2SD	Limited	All	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, two samples will be collected from shallow areas from the near (right) shore in the area of Toothaker Wildlife Management Unit.
Figure 2-17	McNary Dam	Sediment, Shallow	Ponar	"Wallula Bay"	WB-1SD to WB-4SD	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, four samples will be collected from shallow areas from the far (left) shore between the Port of Wall Walla and the confluence with the Walla Wall River.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-17	OCI	Sediment, Shallow	Ponar	Snake River	SR-1SD to SR-5SD	Limited	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediments in the Walla Walla River prior to its confluence with the Columbia River to evaluate other contributing influences.
Figure 2-17	OCI	Sediment, Shallow	Ponar	Walla Walla River	WR-1SD to WR-5SD	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on sonar survey results, five samples will be collected from shallow sediments in the Snake River prior to its confluence with the Columbia River to evaluate other contributing influences.
Figure 2-17	Recreational	Sediment, Shallow	Ponar	Columbia Park	CP-1SD to CP-5SD	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Sediment samples will be randomly collected from the Columbia Park boat basin.
Figure 2-17	Recreational	Sediment, Shoreline	Grab	Clover Island	CI-1SSD to CI-10SSD	Eliminated all Shoreline.	None	All	10	-	-	Random/ Stratified	0 - 0.3 ft	Ten sediment samples will be randomly collected from the shoreline area of Clover Island from a 10 cell grid.
Figure 2-17	Recreational	Sediment, Shallow	Ponar	Clover Island	CI-1SD to CI-10SD	Add 10 new shallow sediment samples. No shoreline sediment observed.	All	-	-	Add CI-1SD to 10SD	10	Random/ Stratified	0 - 0.3 ft	Ten sediment samples will be randomly collected: 3 from upriver of causeway and 7 from within boat basin.
Figure 2-17	Recreational	Sediment, Shoreline	Grab	Two Rivers Park (5 replicate)	TR-1SSD to TR-5SSD	Limited; grid to be established in field	All	-	-	-	-	MIS	0 - 0.3 ft	One MIS sample will be collected at 5 replicate from the shoreline area of Two Rivers Park.
Figure 2-17	Recreational	Sediment, Shoreline	Grab	Cascade Marina	CM-1SSD to CM-10SSD	Eliminated all Shoreline.	-	All	10	-	-	Random/ Stratified	0 - 0.3 ft	Ten sediment samples will be randomly collected from the shoreline area of Cascade Marina from a 10 cell grid.

Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-17	Recreational	Sediment, Shallow	Ponar	Cascade Marina	CM-1SD to CM-5SD	Add 5 new shallow sediment samples; no shoreline sediment observed	All	-	-	CM-1SD to CM-5SD	5	Random/ Stratified	0 - 0.3 ft	Samples will be randomly collected from the marina basin.
Figure 2-17	Recreational	Sediment, Shoreline	Grab	Sacajawea Park	SP-1SSD to SP-10SSD	Limited	None	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Ten sediment samples will be randomly collected from the shoreline area of Sacajawea Park from a 10 cell grid.
Figure 2-17	OCI	Surface Water	Grab	Snake River	SR-1SW (1 sample in spring, 1 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Two surface water samples taken (one each in the spring and fall) from the Snake River to augment existing data and evaluate other contributing influences.
Figure 2-17	OCI	Surface Water	Grab	Walla Walla River	WR-1SW (1 sample in spring, 1 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Two surface water samples will be taken (one each in the spring and fall) from the Walla Walla River to augment existing data and evaluate other contributing influences.
Figure 2-17	Recreational	Surface Water	Grab	Columbia Park	CP-1SW (1 sample in spring, 1 sample in fall)	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	Two surface water samples will be taken (one each in the spring and fall) from near Columbia Park to augment existing data.
Figure 2-17	Recreational	Surface Water	Grab	Clover Island	CI-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Clover Island Boat Launch to augment existing data.
Figure 2-17	Recreational	Surface Water	Grab	Two Rivers Park	TR-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Two Rivers Park to augment existing data.
Figure 2-17	Recreational	Surface Water	Grab	Cascade Marina	CM-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Cascade Marina to augment existing data.

Sample Description														
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	Rationale
Figure 2-17	Recreational	Surface Water	Grab	Sacajawea Park	SP-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Sacajawea Park to augment existing data.
Figure 2-17	McNary Dam	Fish[2]	See Note 1	Burbank Slough	BS-FS1 to BS-FS7	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from Burbank Slough. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-17	McNary Dam	Fish[2]	See Note 1	Finley Slough	FS-FS1 to FS-FS7	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from Finley Slough. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-17	McNary Dam	Fish[2]	See Note 1	Wallula Gap	WG-FS1 to WG-FS6	Opportunistic	On-Site	-	-	-	-	Focused	NA	Fish samples will be collected from Wallula Gap. Number and type of fish may vary depending on availability of fish at time of sampling.
Figure 2-17	McNary Dam	Core, Shallow (2-inch diameter)	Vibracore	Foundation Island (Snake River Sediment)	FIC-1SD to FIC-6SD (2 core locations; approx. 3 sed. samples per core)[4]	Moved FIC-1SD to 3SD upriver to RM 319.	On-Site	-	-	-	-	Focused	0 - Refusal (1 ft subsamples)	Characterize sediments (left side) downriver of the confluence of the Snake and Columbia Rivers. Used to evaluate potential historic deposition of Hanford releases.
Figure 2-18	McNary Dam	Sediment, Shoreline	Grab	Lake Wallula Shoreline Sediments	LW-1SSD to LW-5SSD	Opportunistic	On-Site	-	-	-	-	Random/ Stratified	0 - 0.3 ft	Based on an ecological habitat survey, five samples will be collected from the riparian area; spaced along the Lake Wallula Shoreline.
Figures 2-18 and 2-17	Recreational	Sediment, Shoreline	Grab	Port Kelley Boat Ramp	PK-1SSD to PK-10SSD	Opportunistic, split samples between two boat ramps.	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Ten sediment samples will be randomly collected from the shoreline area of Port Kelley Boat Ramp and Walla Walla River Boat Ramp from two 5 cell grids.
Figure 2-18	Recreational	Sediment, Shoreline	Grab	Hat Rock State Park	HR-1SSD to HR-10SSD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	(NOTE: Originally Mislocated see Fig 2-18.) Ten sediment samples will be randomly collected from the shoreline area of Hat Rock State Park from a 10 cell grid.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-18	McNary Dam	Sediment, Deep	Ponar	Lake Wallula Sediments	LW-1SD to 5SD	Opportunistic	On-Site	-	-	-	-	Focused	0 - 0.3 ft	Based on sonar survey results, five deep core samples will be collected from Lake Wallula; one between river mile 310 and 311; one in the area off shore from Hat Rock State Park/Boat Launch; one near river mile 302 and one between river mile 298 and 299. The upper ten inches of the cores will be used to evaluate ecological impacts.
Figure 2-18	Recreational	Surface Water	Grab	Port Kelley Boat Ramp	PK-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Port Kelley Boat Ramp to augment existing data.
Figure 2-18	Recreational	Surface Water	Grab	Hat Rock State Park	HR-1SW	Limited	All	-	-	-	-	Random/ Stratified	2/3 surface water depth	One surface water sample will be taken from near Hat Rock State Park/Boat Launch to augment existing data.
Figure 2-18	McNary Dam	Surface Water, Deep	Grab	Lake Wallula SW	LW-1SW to LW-2SW	Limited	All	-	-	-	-	Random/ Stratified	1 ft above sediment surface	One deep water sample will be taken between river mile 300 and river mile 301 to augment existing data.
Figure 2-18	McNary Dam	Core, Deep (4-inch diameter)	Drill Rig	Lake Wallula	LWC-1SD to LWC-3SD (1 core location subdivided. into approx. 3 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (8 inch subsamples)	Characterize sediments just upriver of Port Kelley and a boat launch (left side). Used to augment existing core data. Upper portion of sample to be used to evaluate ecological impacts.
Figure 2-18	McNary Dam	Core, Deep (4-inch diameter)	Drill Rig	Lake Wallula	LWC-4SD to LWC-6SD (1 core location subdivided. into approx. 3 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (8 inch subsamples)	Characterize sediments just upriver of Hat Rock State Park/Boat Launch (left side). Used to augment existing core data. Upper portion of sample to be used to evaluate ecological impacts.
Figure 2-19	Recreational	Sediment, Shoreline	Grab	McNary Dam Boat Ramps	MDBR-1SSD to MDBR-20SSD	Eliminate	-	All	20	-	-	Random/ Stratified	0 - 0.3 ft	Samples will be randomly collected from the shoreline area of two (WA & OR side) McNary Dam Boat Ramps from a 10 cell grid each.
Figure 2-19	Recreational	Surface Water	Grab	McNary Dam Boat Ramps	MDBR-1SW to MDBR-2SW	Opportunistic	On-Site	-	-	-	-	Focused	2/3 surface water depth	Surface water samples will be collected from the shoreline area of McNary Dam Boat Ramp.
Figure 2-19	McNary Dam	Surface Water, Deep	Grab	McNary Dam SW	MD-3SW	Opportunistic	On-Site	-	-	-	-	Focused	1 ft above sediment surface	One deep water sample will be taken between river mile 292 and river mile 293 to augment existing data.

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Sample Description														Rationale
Figure	Designation	Sample Type	Collection Method	Sampling Location	Temporary Sample ID	Adjustments	Confirmed Location	Eliminated Notes	Eliminated #	Add Notes	Add #	Sample Design	Sample Depth	
Figure 2-19	McNary Dam	Core, Deep (4-inch diameter)	Drill Rig	McNary Dam	MDC-1SD to MDC-20SD (1 core location subdivided. into approx. 20 sed. samples)[4]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (8 inch subsamples)	Characterize the sediments ~3/4 mile above McNary Dam (center of river). Used to augment existing core data. Upper portion of sample to be used to evaluate ecological impacts.
Figure 2-19	Recreational	Sediment, Shoreline	Grab	McNary Beach Recreational Area	MBRA-1SSD to MBRA-5SSD	All New	All	-	-	New Samples	5	Random/ Stratified	0 - 0.3 ft	Samples will be randomly collected the beach area a 10 cell grid each.
Figure 2-19	Recreational	Sediment, Shallow	Ponar	McNary Beach Recreational Area	MBRA-1SD to MBRA-4SD	All New	All	-	-	MBRA-1SD to MBRA-4SD	4	Random/ Stratified	0 - 0.3 ft	Four samples will be randomly collected from the beach area.
Figure 2-19	Recreational	Sediment, Shallow	Ponar	McNary Dam Boat Ramp Oregon Side	MDBR-1SD to MDBR-3SD	Opportunistic	On-Site	-	-	MDBR-1SD to MDBR-3SD	3	Focused	0 - 0.3 ft	Three samples will be randomly collected from the McNary Dam Boat Ramp.
Figure 2-19	Recreational	Sediment, Shallow	Ponar	McNary Dam Boat Ramp Washington Side	MDBR-4SD to MDBR-6SD	Opportunistic	On-Site	-	-	MDBR-4SD to MDBR-6SD	3	Focused	0 - 0.3 ft	Three samples will be randomly collected from the McNary Dam Boat Ramp.
Figure 2-20	Bonneville Dam	Core, Deep (4-inch diameter)	Drill Rig	Bonneville Dam	BDC-1SD to BDC-6SD (1 core subdivided. Into approx. 6 sed. samples)[1]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (8 inch subsamples)	Characterize the sediments in the Bonneville Dam Pool with two additional locations to complement an existing core sample on the right side of the river. This location is on the left side of the river. Note: data used for Hanford Rad characterization only.

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Sample Description														
Figure	**Designation**	**Sample Type**	**Collection Method**	**Sampling Location**	**Temporary Sample ID**	**Adjustments**	**Confirmed Location**	**Eliminated**		**Add**		**Sample Design**	**Sample Depth**	**Rationale**
								Notes	**#**	**Notes**	**#**			
Figure 2-20	Bonneville Dam	Core, Deep (4-inch diameter)	Drill Rig	Bonneville Dam	BDC-7SD to BDC-12SD (1 core subdivided. into approx. 6 sed. samples)[1]	Opportunistic	On-Site	-	-	-	-	Focused	0 - Refusal (8 inch subsamples)	Characterize the sediments in the Bonneville Dam Pool with two additional locations to complement an existing core sample on the right side of the river. This location is on the left side of the river. Note: data used for Hanford Rad characterization only.
Totals								Total Eliminated =	**116**	Total Added =	**130**			

Notes:

1 Fish collection method shall be either:
- electrofishing (off limits in spring due to presence of juvenile steelhead), effective for whitefish, carp, bass, and suckers; long-line;
- hook and line (effective for whitefish, walleye, and sturgeon)

2 Arsenic for both organic and inorganic speciation - fish tissue only

3 Field parameters for surface water samples are measured in the field and consist of temperature, specific conductivity, dissolved oxygen, and pH
Field parameters for pore water samples consist of specific conductivity and temperature.

4 The actual number of core subsamples will depend on the volume of sediment recovered.

5 Every 10th surface water and sediment sample analyzed for PCB Aroclors by 8082 will also be analyzed for PCB congeners. All fish samples will be analyzed for congeners only.

6 Filtered applies to water only. Solids (i.e., sediment and soil) are not filtered.

7 Groundwater plume upwelling sample locations will be finalizd once the reconnaissance survey has been completed and the final design has been approved by the Tri-Parties.

8 Groundwater plume upwelling transects (not discrete samples) are depicted on the figure.

-- Sample not analyzed for given parameter

AEA = Alpha energy analysis
ASTM = American Society for Testing and Materials
AVS/SEM = acid volatile sulfides/simultaneously extracted metals by EPA Method 200.8
BERA = Baseline Ecological Risk Assessment
BHHRA = Baseline Human Health Risk Assessment
Core = Sediment core
Cr+6 = hexavalent chromium by EPA Method 7196A
DOC = dissolved organic carbon
EPA = United States Environmental Protection Agency
GEA = Gamma energy analysis
gms = grams
GU = Groundwater Plume Upwelling
GW = groundwater
HMU = Habitat Management Unit
HT = Hanford Townsite
Metals = by EPA Methods 6010/6020 and 7471
MIS = Multiple Incremental Sampling
OCI = other contributing influence (i.e., non-Hanford)
Pesticides = by EPA Method 8081
PCE = tetrachloroethylene
PCBs = pesticides/polychlorinated biphenyls by EPA Method 8082
PHC = petroleum hydrocarbon by EPA Method 8115
SD = sediment
SVOCs = semivolatile organic compounds by EPA Method 8270C
SW = surface water
TOC = total organic carbon by EPA Method 9060
VOCs = volatile organic compounds by EPA Method 8260B

Attachment 12

Figure 2-2

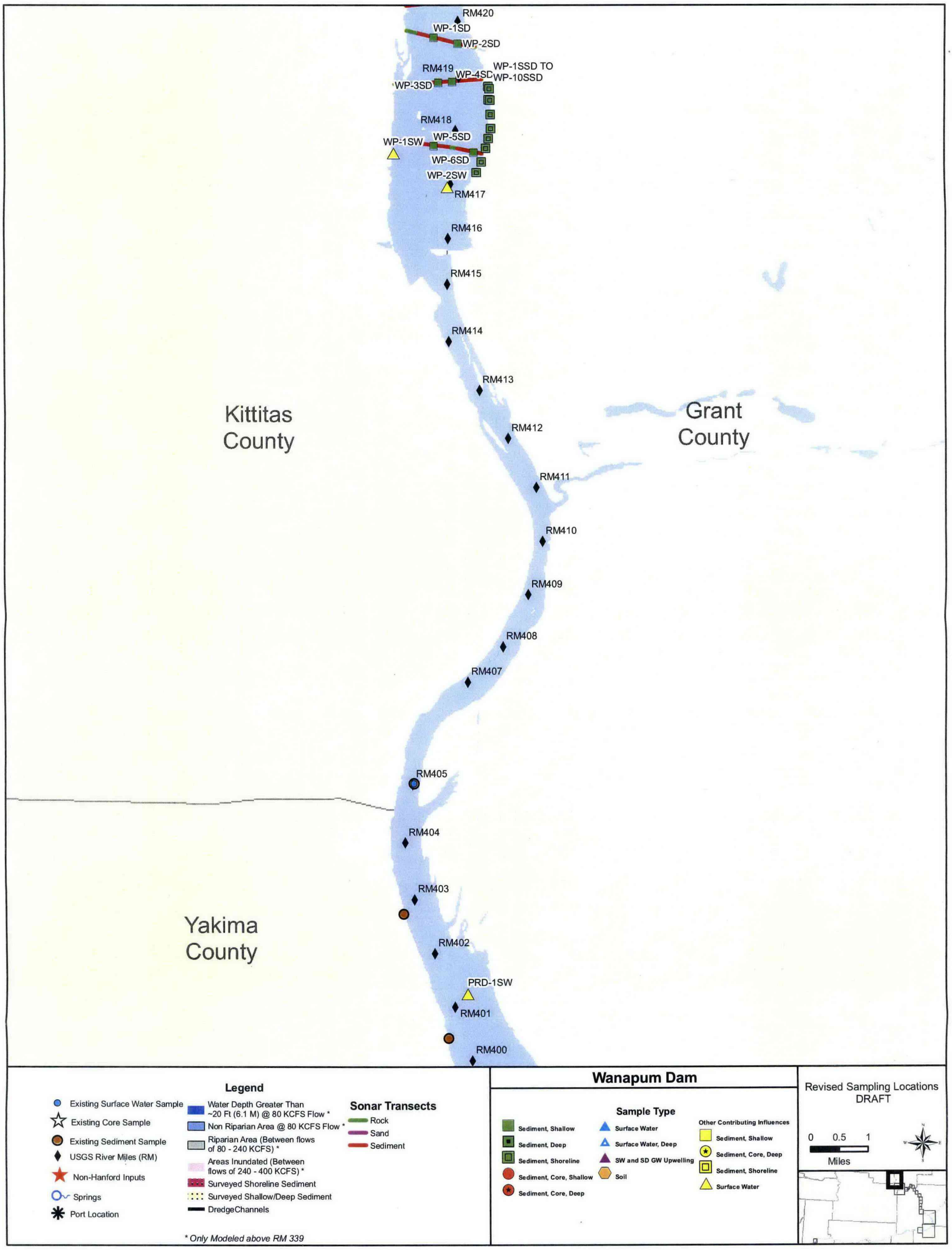

RM420
WP-1SD
WP-2SD
RM419
WP-4SD
WP-1SSD TO
WP-10SSD
WP-3SD
RM418
WP-5SD
WP-1SW
WP-6SD
WP-2SW
RM417
RM416
RM415
RM414
RM413
Kittitas
County
Grant
County
RM412
RM411
RM410
RM409
RM408
RM407
RM405
RM404
RM403
Yakima
County
RM402
PRD-1SW
RM401
RM400
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Wanapum Dam
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.5 1
Miles

Figure 2-3


Grant
County
PRD-1SW
RM400
RM399
PRD-2SW
Goose Island
RM398
PRD-
1SD TO PRD-9SD
PRD-10SD TO
PRD-18SD
PRDC-1SD to
PRDC-20SD
RM397
Priest
Rapids
Dam
RM396
RM395
PRD-4SW
SH-3SSD
RM394
PRD-
3SW
SH2SSD
RM393
SH-
1SSD
RM392
RM391
RM390
RM389
RM388
Vernita
Bridge
PNNL SW
Transect
Yakima
County
Benton
County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Upriver
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.4 0.8
Miles

Figure 2-4

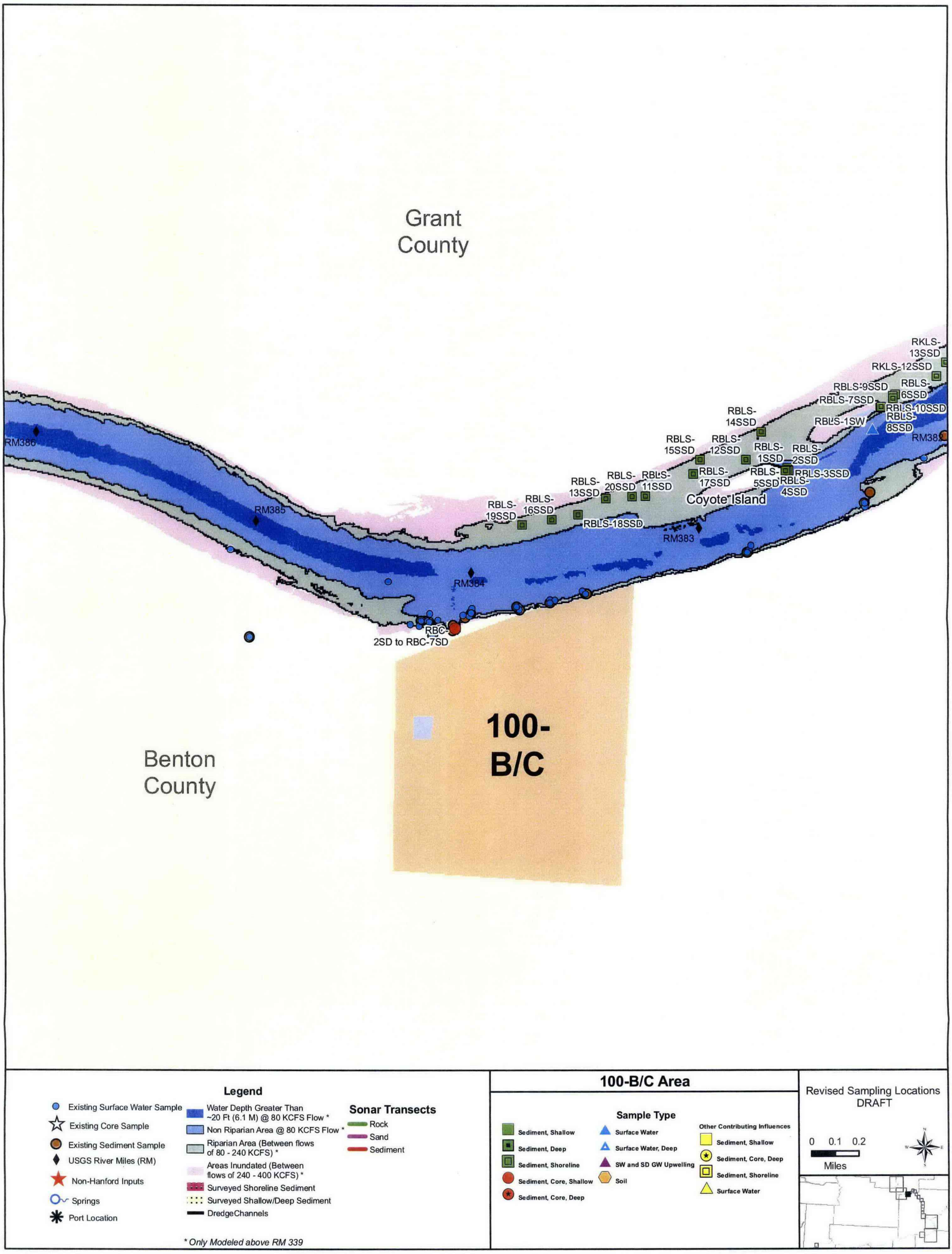

Grant
County
RKLS-13SSD
RKLS-12SSD
RBLS-9SSD
RBLS-6SSD
RBLS-7SSD
RBLS-10SSD
RBLS-8SSD
RBLS-1SW
RBLS-14SSD
RBLS-15SSD
RBLS-12SSD
RBLS-1SSD
RBLS-2SSD
RBLS-17SSD
RBLS-5SSD
RBLS-3SSD
RBLS-4SSD
RBLS-13SSD
RBLS-20SSD
RBLS-11SSD
RBLS-19SSD
RBLS-16SSD
RBLS-18SSD
Coyote Island
RM386
RM385
RM384
RM383
RM382
RBC-2SD to RBC-7SD
100-B/C
Benton
County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-B/C Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

Figure 2-5

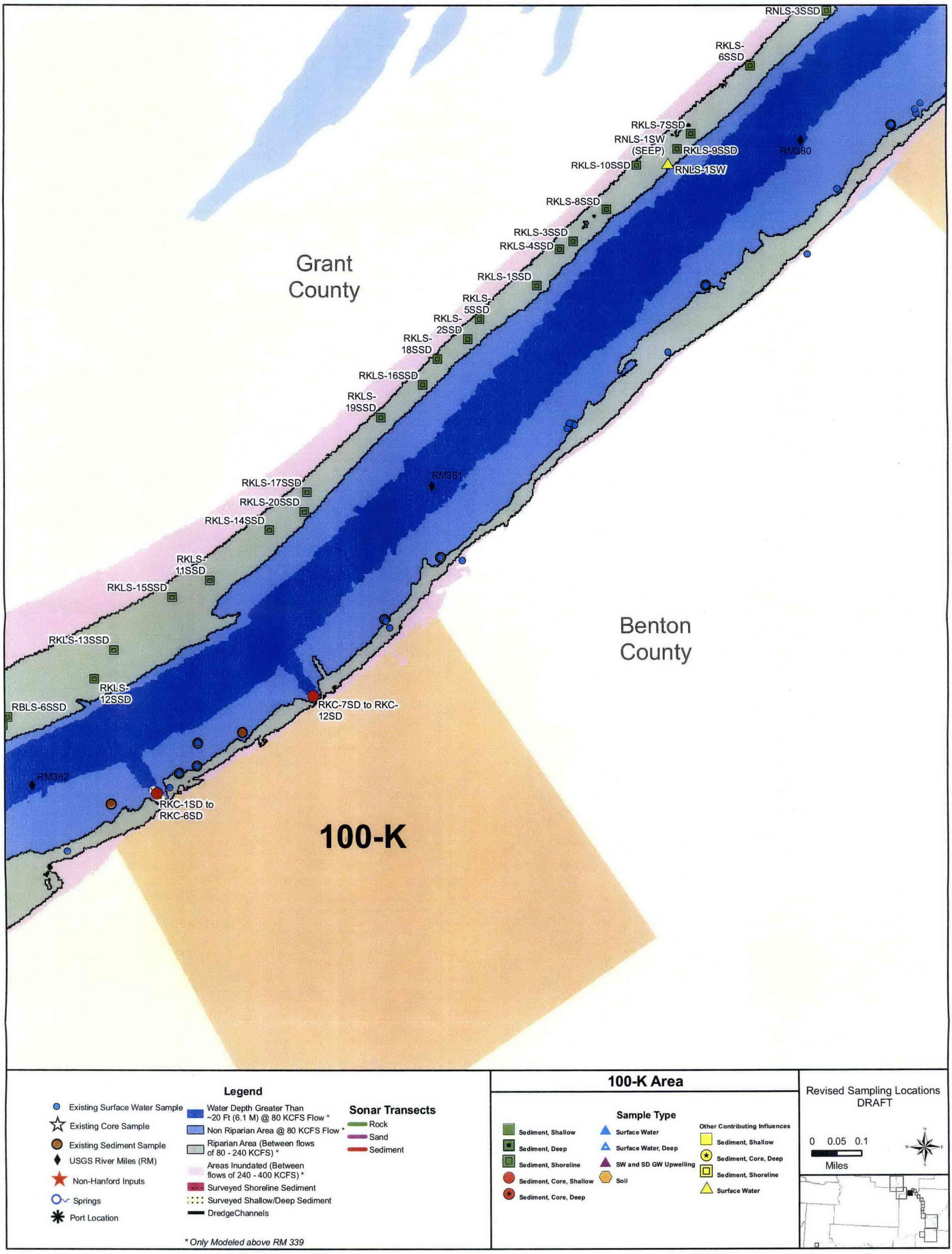

RNLS-3SSD
RKLS-6SSD
RKLS-7SSD
RNLS-1SW (SEEP)
RKLS-9SSD
RM380
RKLS-10SSD
RNLS-1SW
RKLS-8SSD
RKLS-3SSD
RKLS-4SSD
Grant County
RKLS-1SSD
RKLS-5SSD
RKLS-2SSD
RKLS-18SSD
RKLS-16SSD
RKLS-19SSD
RM381
RKLS-17SSD
RKLS-20SSD
RKLS-14SSD
RKLS-11SSD
RKLS-15SSD
RKLS-13SSD
Benton County
RKLS-12SSD
RBLS-6SSD
RKC-7SD to RKC-12SD
RM382
RKC-1SD to RKC-6SD
100-K
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-K Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.05 0.1
Miles

Figure 2-6

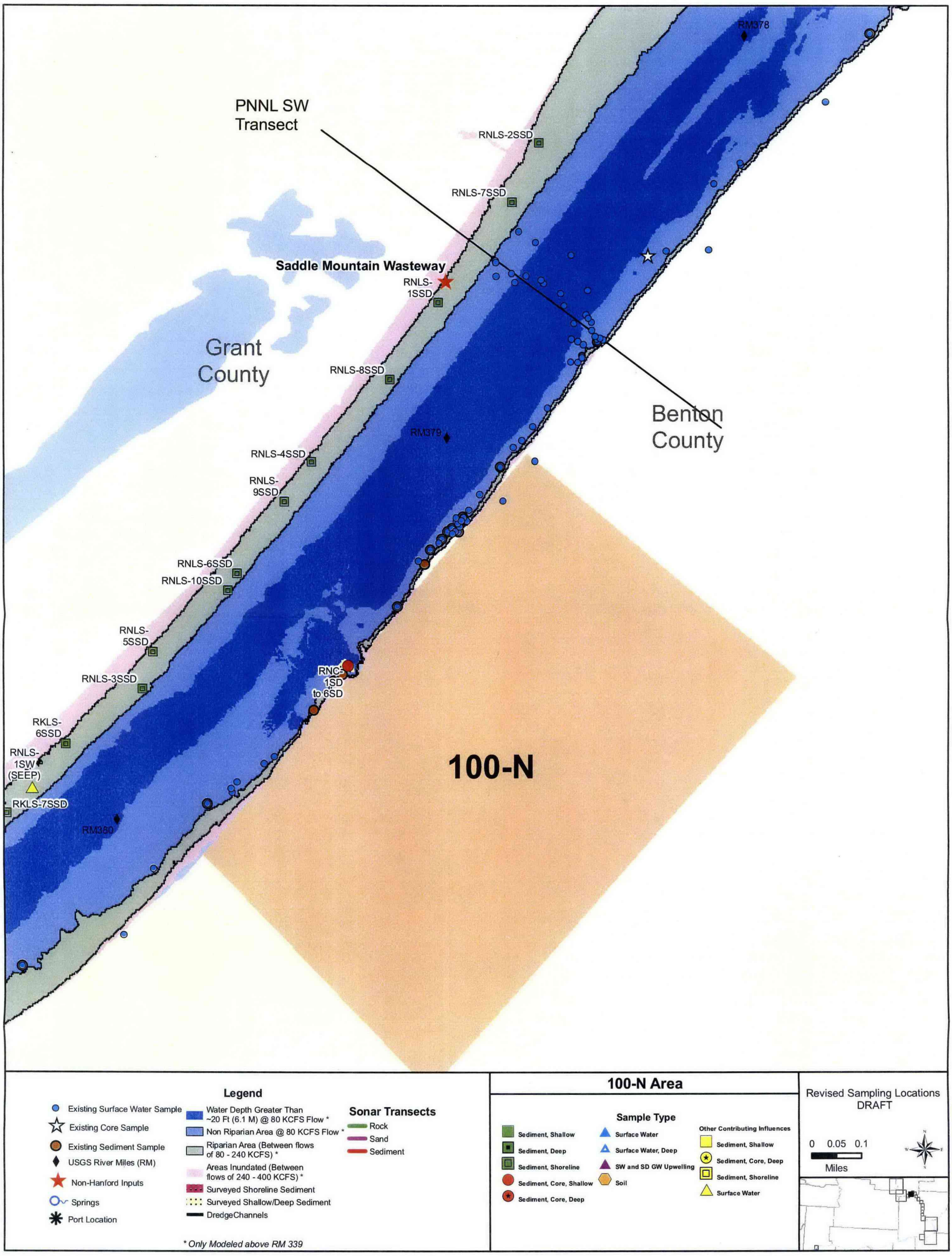

PNNL SW
Transect
RM378
RNLS-2SSD
RNLS-7SSD
Saddle Mountain Wasteway
RNLS-
1SSD
Grant
County
RNLS-8SSD
Benton
County
RM379
RNLS-4SSD
RNLS-
9SSD
RNLS-6SSD
RNLS-10SSD
RNLS-
5SSD
RNLS-3SSD
RNC-
1SD
to 6SD
RKLS-
6SSD
RNLS-
1SW
(SEEP)
RKLS-7SSD
RM380
100-N
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-N Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.05 0.1
Miles

Figure 2-7

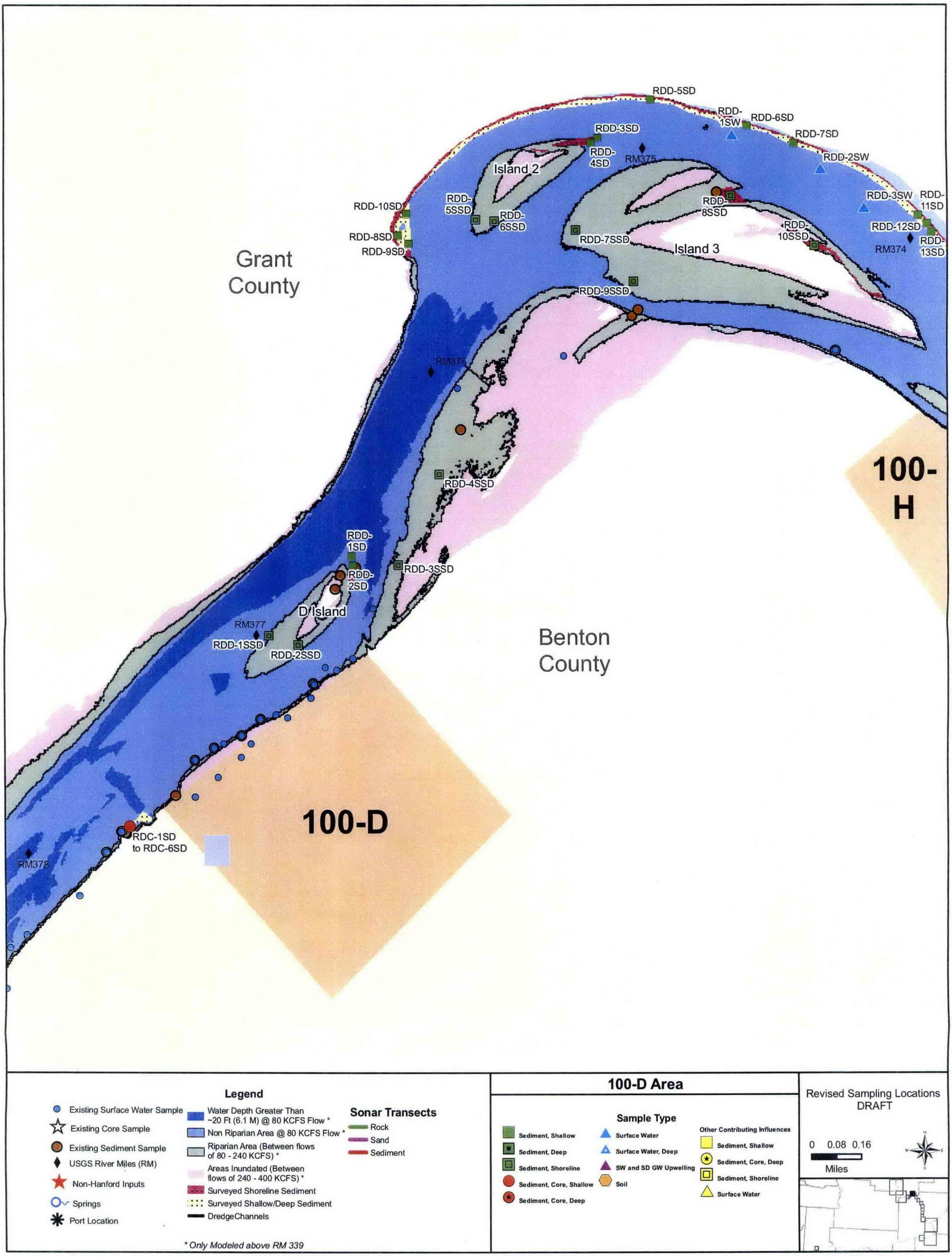

RDD-5SD
RDD-1SW
RDD-6SD
RDD-7SD
RDD-2SW
RDD-3SD
RDD-4SD
RM375
Island 2
RDD-10SD
RDD-5SSD
RDD-6SSD
RDD-8SD
RDD-9SD
RDD-8SSD
RDD-3SW
RDD-11SD
RDD-12SD
RDD-13SD
RM374
RDD-10SSD
RDD-7SSD
Island 3
RDD-9SSD
RM376
Grant County
RDD-4SSD
100-H
RDD-1SD
RDD-2SD
RDD-3SSD
D Island
RM377
RDD-1SSD
RDD-2SSD
Benton County
100-D
RDC-1SD to RDC-6SD
RM378
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-D Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.08 0.16
Miles

Figure 2-8

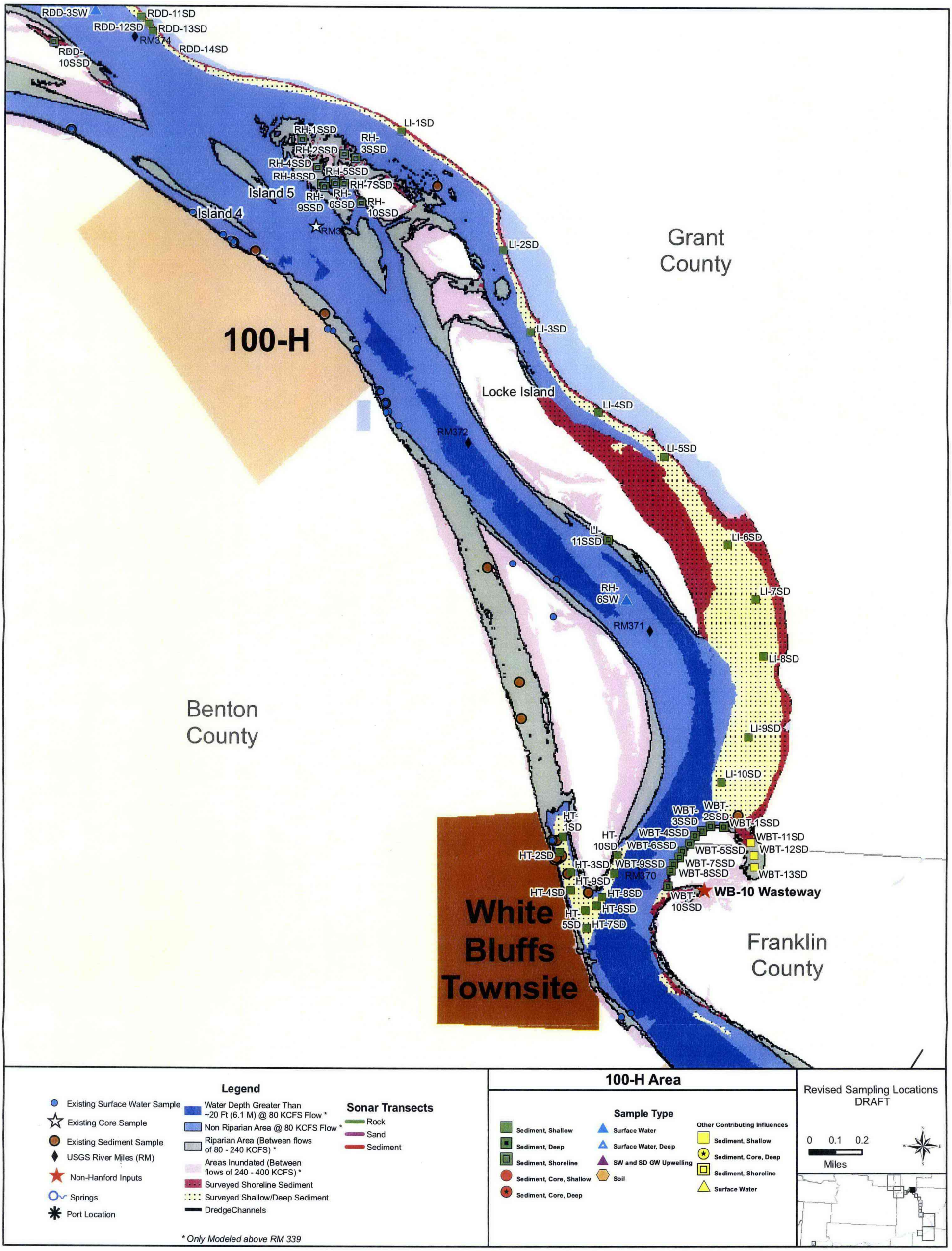
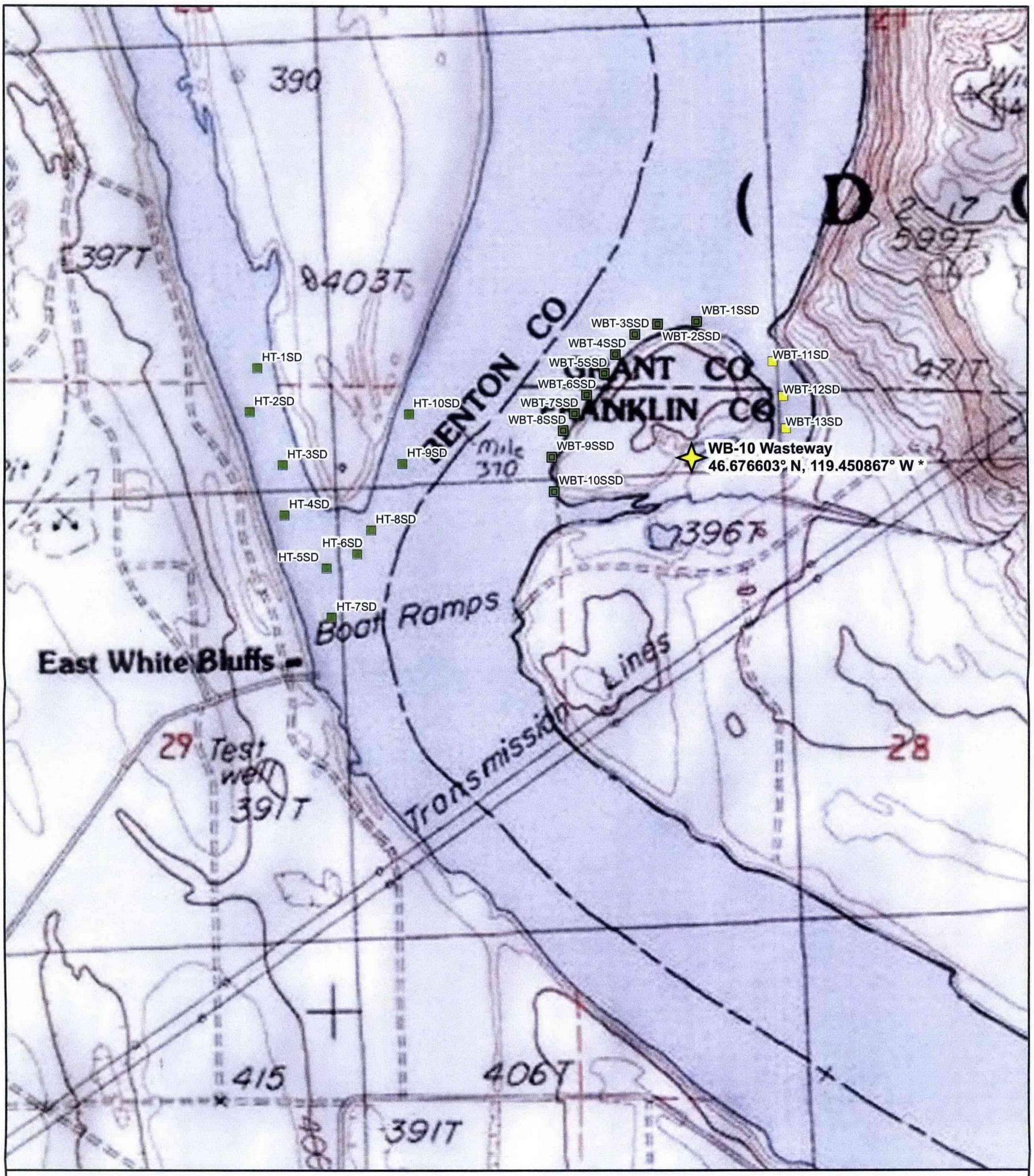

RDD-3SW
RDD-11SD
RDD-12SD
RDD-13SD
RM374
RDD-14SD
RDD-10SSD
LI-1SD
RH-1SSD
RH-3SSD
RH-2SSD
RH-4SSD
RH-5SSD
RH-8SSD
RH-7SSD
Island 5
RH-9SSD
RH-6SSD
RH-10SSD
Island 4
RM373
LI-2SD
Grant County
100-H
LI-3SD
Locke Island
LI-4SD
RM372
LI-5SD
LI-11SSD
LI-6SD
RH-6SW
LI-7SD
RM371
LI-8SD
Benton County
LI-9SD
LI-10SD
HT-1SD
WBT-3SSD
WBT-2SSD
WBT-1SSD
HT-10SD
WBT-4SSD
WBT-11SD
HT-2SD
WBT-6SSD
WBT-5SSD
WBT-12SD
HT-3SD
WBT-9SSD
WBT-7SSD
RM370
WBT-8SSD
WBT-13SD
HT-9SD
HT-4SD
HT-8SD
WB-10 Wasteway
WBT-10SSD
White Bluffs Townsite
HT-6SD
HT-5SD
HT-7SD
Franklin County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-H Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

Figure 2-8(a)



Proposed Wasteway Sampling Location

0 500 1,000 Feet

* coordinates are WGS 1984 decimal degrees

Figure 2-9

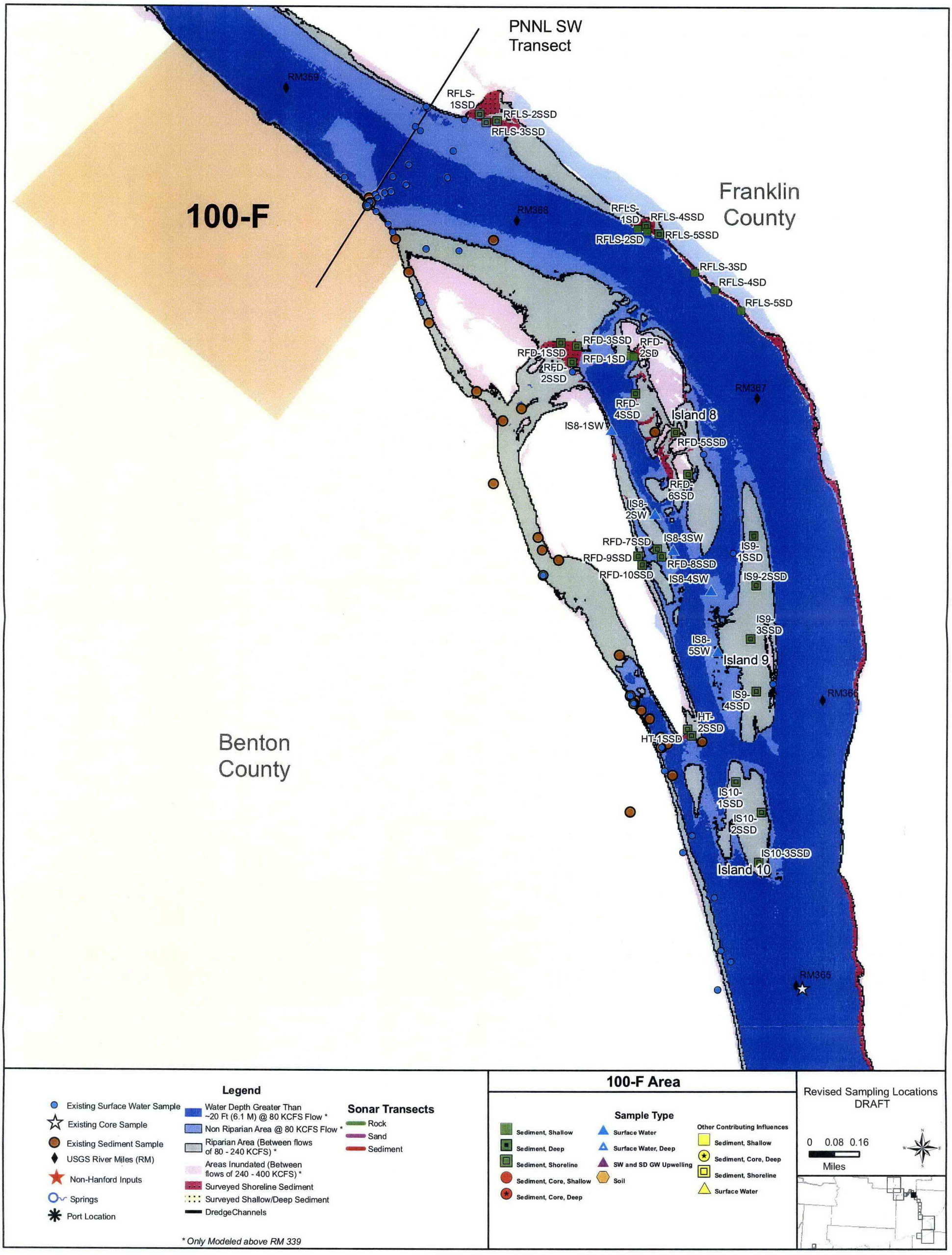

PNNL SW
Transect
RM369
RFLS-
1SSD
RFLS-2SSD
RFLS-3SSD
100-F
RM368
RFLS-
1SD
RFLS-4SSD
RFLS-5SSD
RFLS-2SD
Franklin
County
RFLS-3SD
RFLS-4SD
RFLS-5SD
RFD-3SSD
RFD-
2SD
RFD-1SSD
RFD-1SD
RFD-
2SSD
RM367
RFD-
4SSD
Island 8
IS8-1SW
RFD-5SSD
RFD-
6SSD
IS8-
2SW
RFD-7SSD
IS8-3SW
IS9-
1SSD
RFD-9SSD
RFD-8SSD
RFD-10SSD
IS8-4SW
IS9-2SSD
IS9-
3SSD
IS8-
5SW
Island 9
IS9-
4SSD
RM366
HT-
2SSD
HT-1SSD
Benton
County
IS10-
1SSD
IS10-
2SSD
IS10-3SSD
Island 10
RM365
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
100-F Area
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.08 0.16
Miles

Figure 2-10

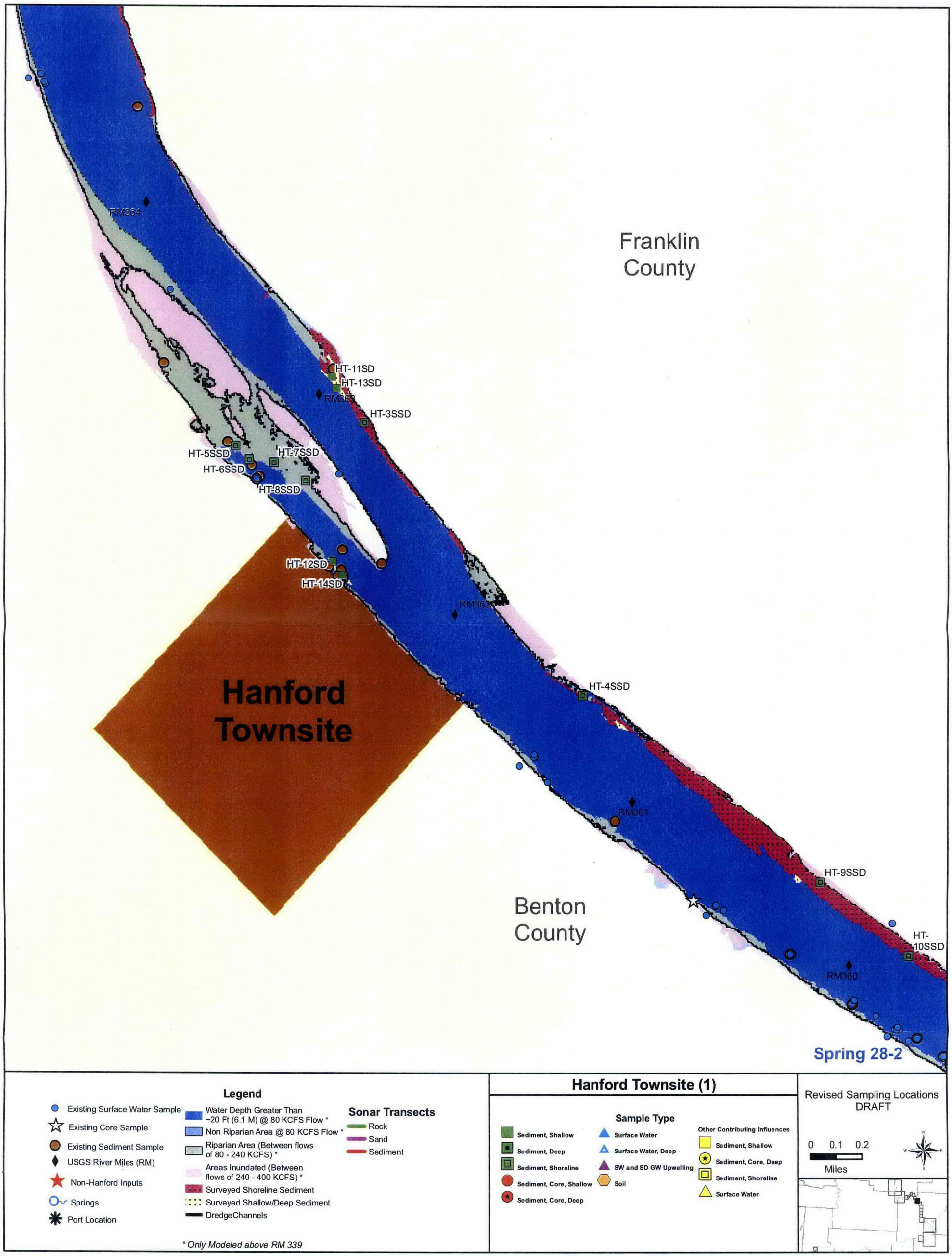

Franklin
County
RM364
HT-11SD
HT-13SD
RM363
HT-3SSD
HT-5SSD
HT-7SSD
HT-6SSD
HT-8SSD
HT-12SD
HT-14SD
RM362
Hanford
Townsite
HT-4SSD
RM361
HT-9SSD
Benton
County
HT-
10SSD
RM360
Spring 28-2
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Hanford Townsite (1)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

Figure 2-11

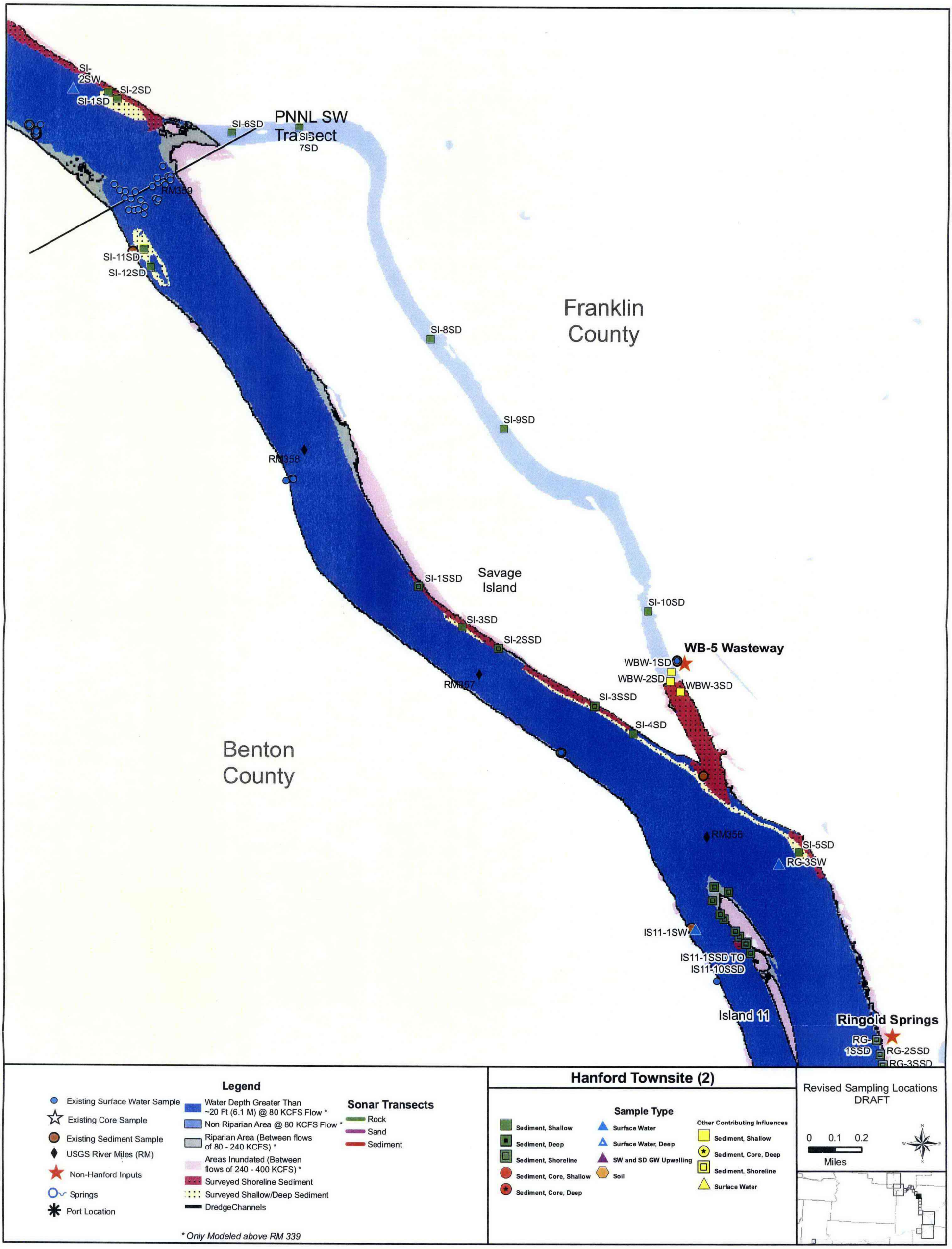
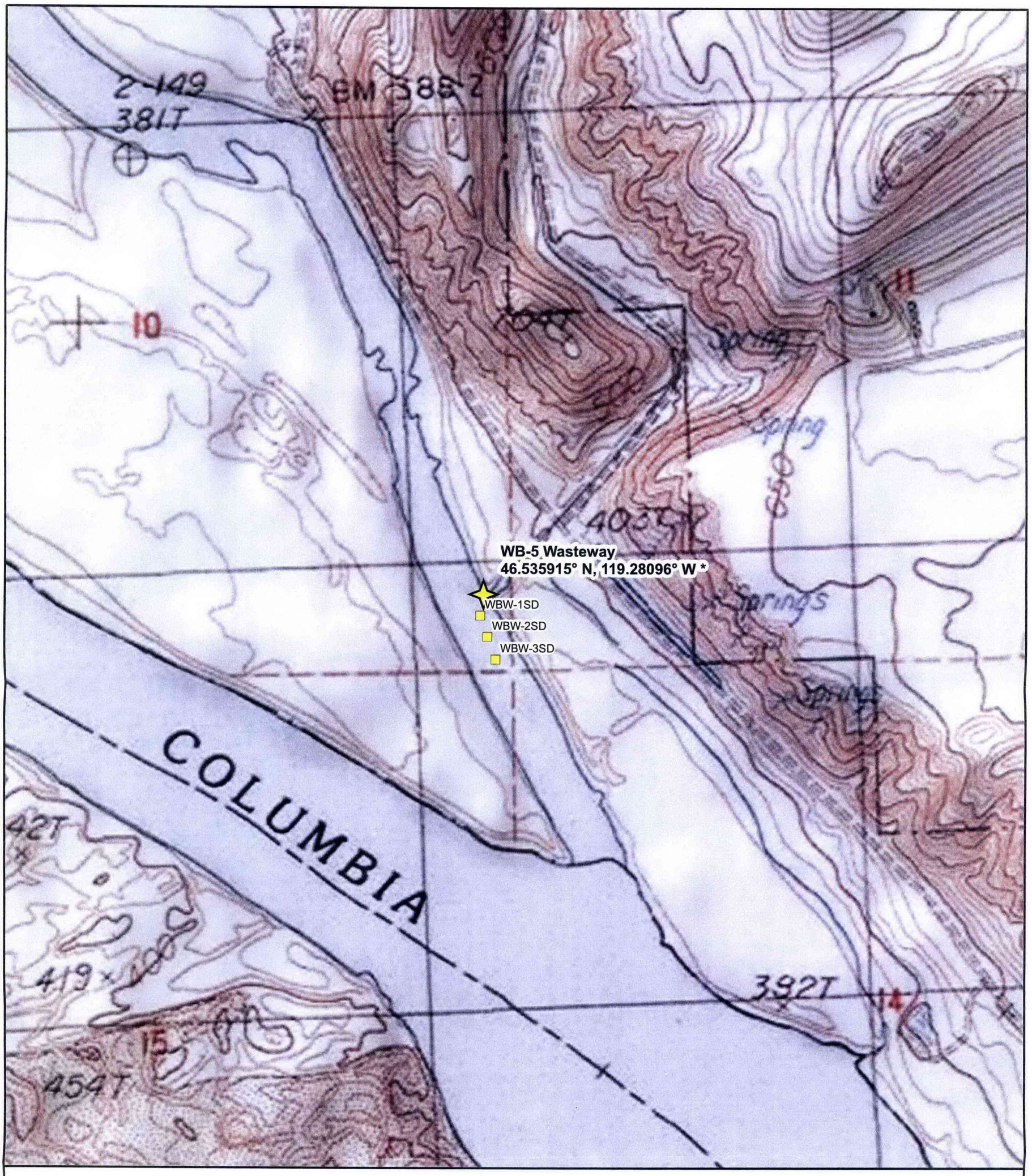

SI-2SW
SI-2SD
SI-1SD
SI-6SD
PNNL SW Transect
SI-7SD
RM339
SI-11SD
SI-12SD
Franklin County
SI-8SD
SI-9SD
RM358
SI-1SSD
Savage Island
SI-10SD
SI-3SD
SI-2SSD
WB-5 Wasteway
WBW-1SD
WBW-2SD
WBW-3SD
RM357
SI-3SSD
SI-4SD
Benton County
RM356
SI-5SD
RG-3SW
IS11-1SW
IS11-1SSD TO IS11-10SSD
Island 11
Ringold Springs
RG-1SSD
RG-2SSD
RG-3SSD
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Hanford Townsite (2)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

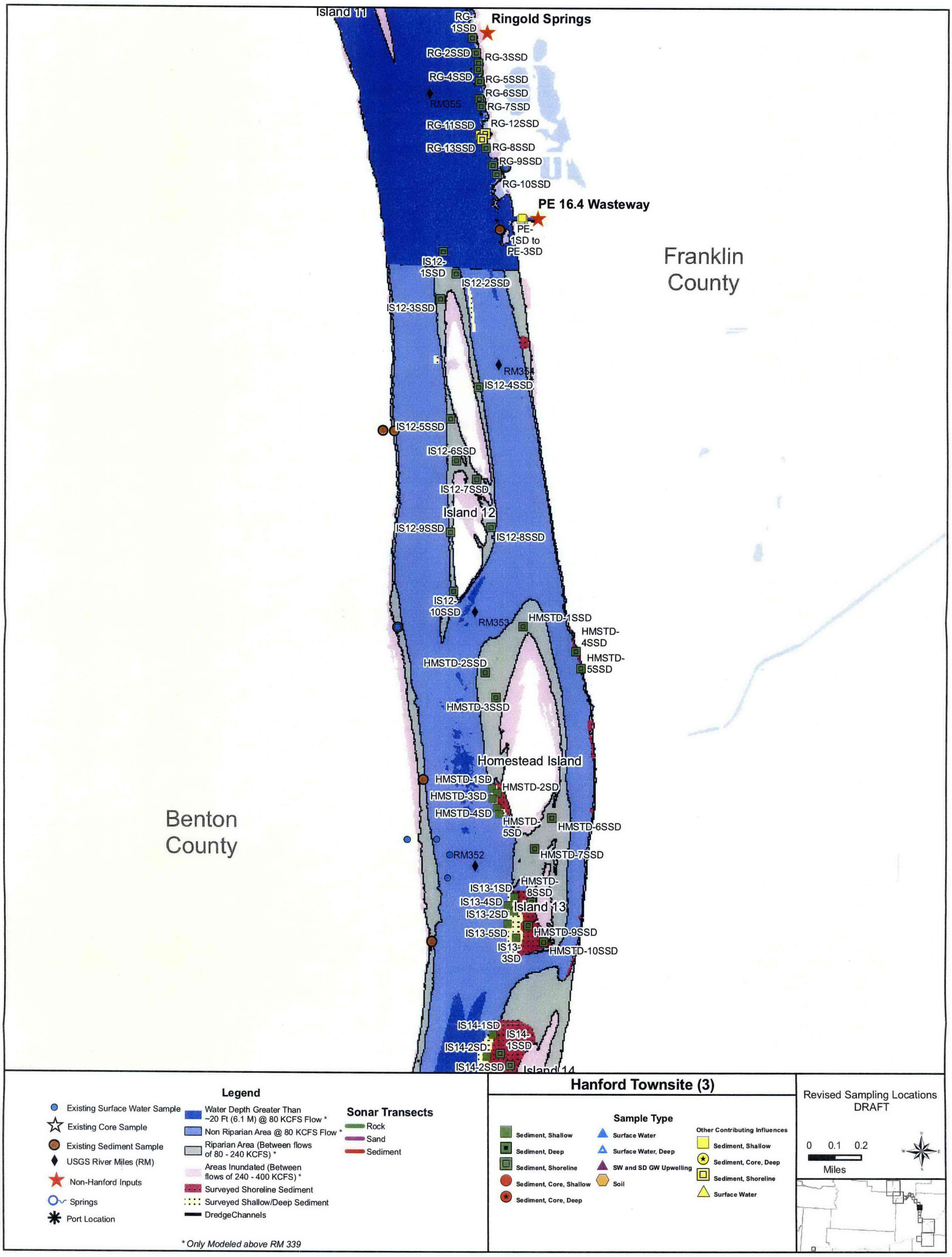
Figure 2-11 (a)

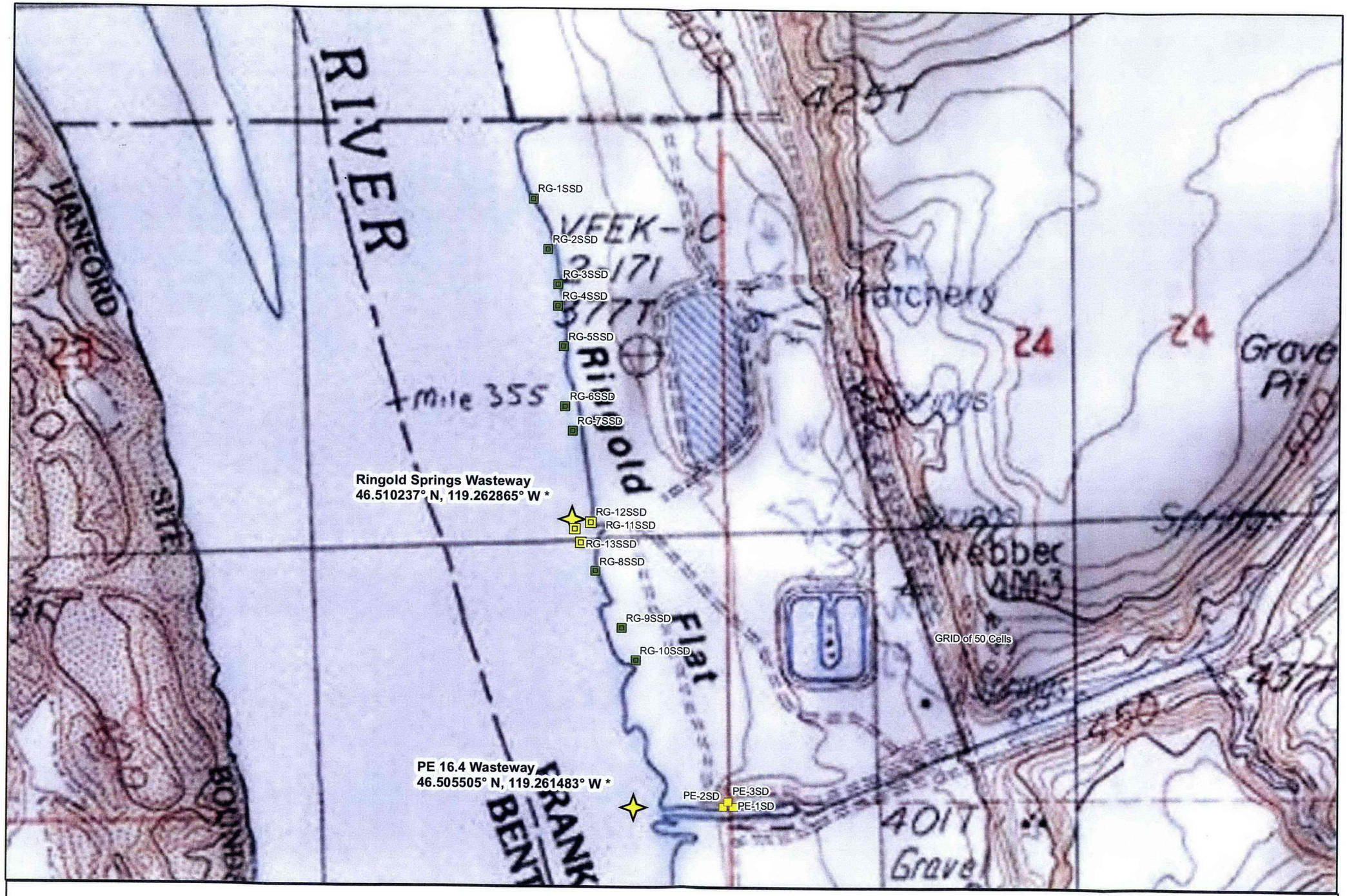


Proposed Wasteway Sampling Location

* coordinates are WGS 1984 decimal degrees

Figure 2-12


Island 11
RG-1SSD
Ringold Springs
RG-2SSD
RG-3SSD
RG-4SSD
RG-5SSD
RG-6SSD
RM355
RG-7SSD
RG-11SSD
RG-12SSD
RG-13SSD
RG-8SSD
RG-9SSD
RG-10SSD
PE 16.4 Wasteway
PE-1SD to PE-3SD
Franklin County
IS12-1SSD
IS12-2SSD
IS12-3SSD
RM354
IS12-4SSD
IS12-5SSD
IS12-6SSD
IS12-7SSD
Island 12
IS12-9SSD
IS12-8SSD
IS12-10SSD
RM353
HMSTD-1SSD
HMSTD-4SSD
HMSTD-5SSD
HMSTD-2SSD
HMSTD-3SSD
Homestead Island
HMSTD-1SD
HMSTD-2SD
HMSTD-3SD
HMSTD-4SD
HMSTD-5SD
HMSTD-6SSD
Benton County
RM352
HMSTD-7SSD
IS13-1SD
HMSTD-8SSD
IS13-4SD
Island 13
IS13-2SD
IS13-5SD
HMSTD-9SSD
IS13-3SD
HMSTD-10SSD
IS14-1SD
IS14-1SSD
IS14-2SD
IS14-2SSD
Island 14
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Hanford Townsite (3)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles



Proposed Sampling Location - Detailed View

0 5,000

* coordinates are WGS 1984 decimal degrees

Figure 2-12(a)

Figure 2-13

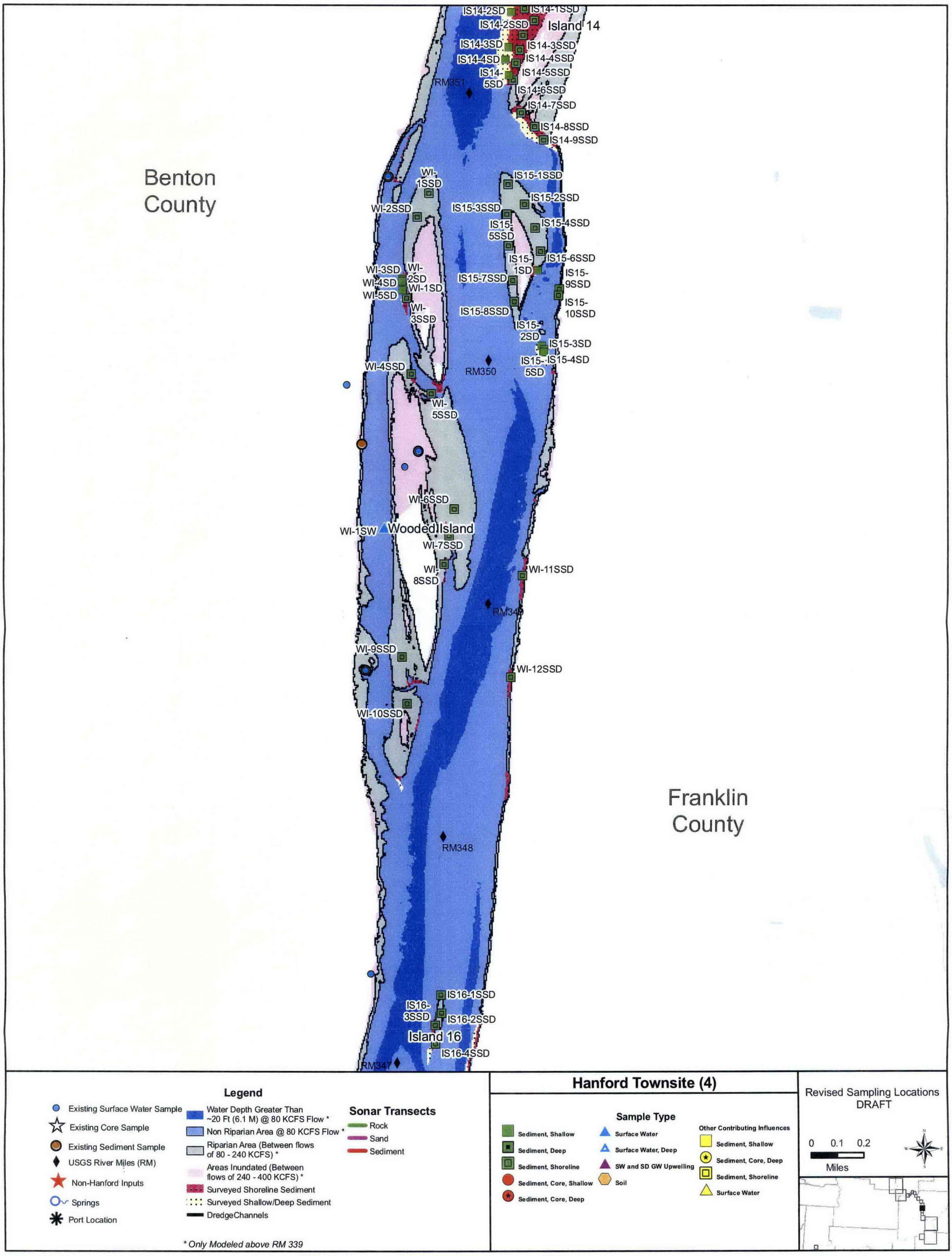

Benton County
Franklin County
IS14-2SD
IS14-1SSD
IS14-2SSD
Island 14
IS14-3SD
IS14-3SSD
IS14-4SD
IS14-4SSD
IS14-5SD
IS14-5SSD
RM351
IS14-6SSD
IS14-7SSD
IS14-8SSD
IS14-9SSD
WI-1SSD
IS15-1SSD
IS15-2SSD
WI-2SSD
IS15-3SSD
IS15-5SSD
IS15-4SSD
IS15-1SD
IS15-6SSD
WI-3SD
WI-2SD
IS15-7SSD
IS15-9SSD
WI-4SD
WI-1SD
WI-5SD
WI-3SSD
IS15-8SSD
IS15-10SSD
IS15-2SD
IS15-3SD
IS15-5SD
IS15-4SD
RM350
WI-4SSD
WI-5SSD
WI-6SSD
WI-1SW
Wooded Island
WI-7SSD
WI-8SSD
WI-11SSD
RM349
WI-9SSD
WI-12SSD
WI-10SSD
RM348
IS16-1SSD
IS16-3SSD
IS16-2SSD
Island 16
IS16-4SSD
RM347
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Hanford Townsite (4)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

Figure 2-14

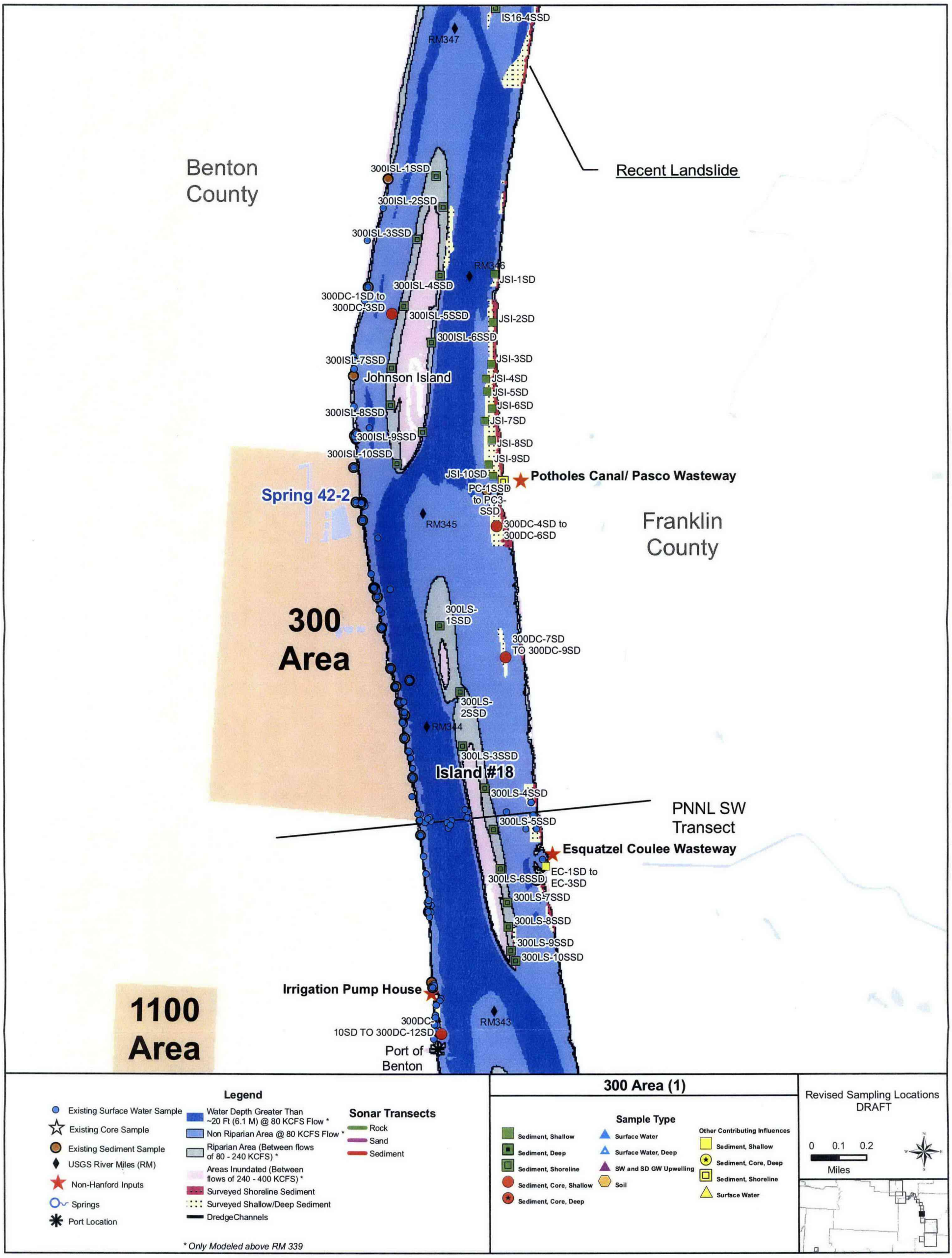
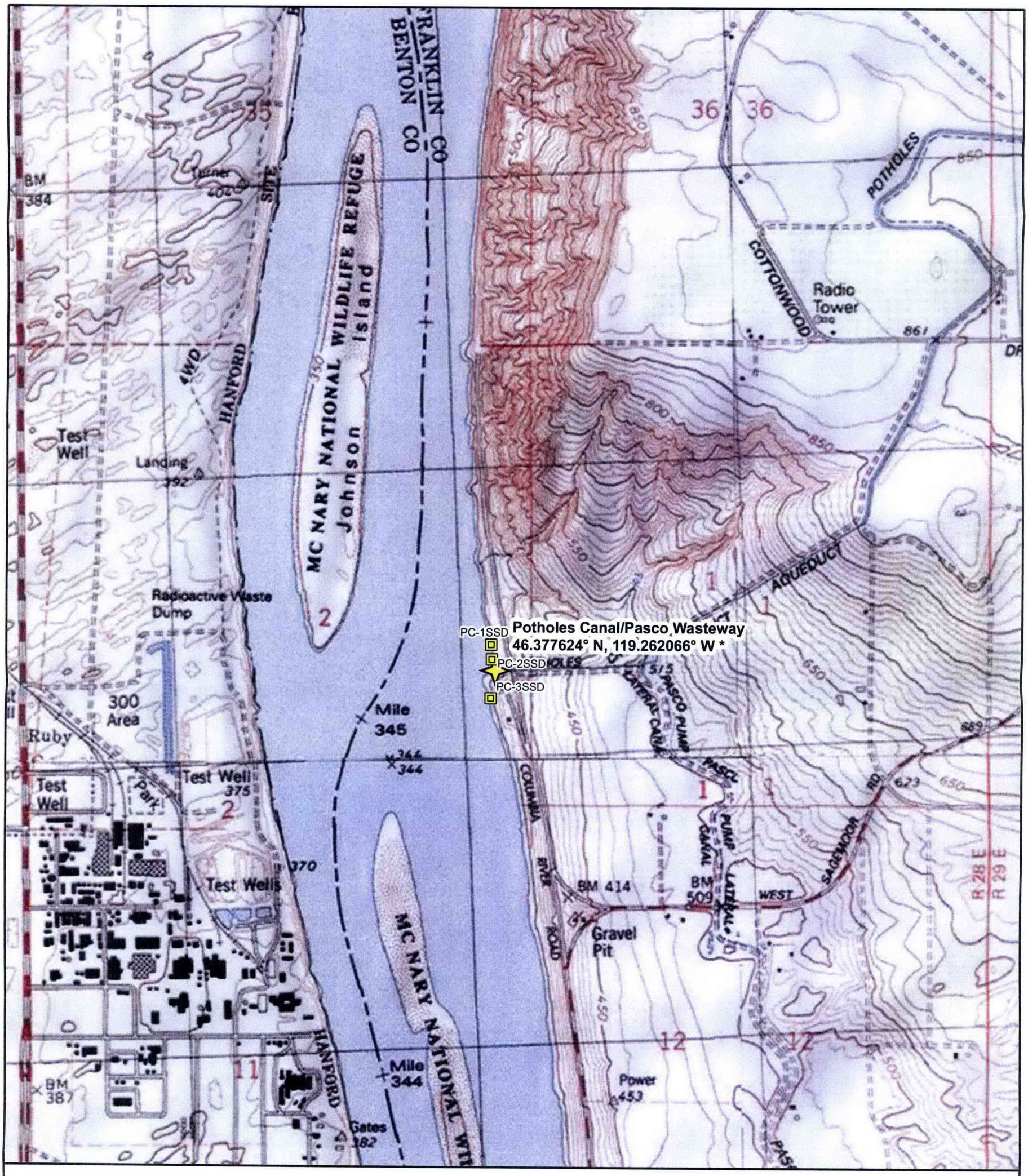

Benton County
Recent Landslide
IS16-4SSD
RM347
300ISL-1SSD
300ISL-2SSD
300ISL-3SSD
RM346
JSI-1SD
300ISL-4SSD
300DC-1SD to 300DC-3SD
300ISL-5SSD
JSI-2SD
300ISL-6SSD
300ISL-7SSD
JSI-3SD
Johnson Island
JSI-4SD
JSI-5SD
JSI-6SD
300ISL-8SSD
JSI-7SD
300ISL-9SSD
JSI-8SD
300ISL-10SSD
JSI-9SD
JSI-10SD
Potholes Canal/ Pasco Wasteway
PC-1SSD to PC3-SSD
Spring 42-2
RM345
300DC-4SD to 300DC-6SD
Franklin County
300 Area
300LS-1SSD
300DC-7SD TO 300DC-9SD
300LS-2SSD
RM344
300LS-3SSD
Island #18
300LS-4SSD
PNNL SW Transect
300LS-5SSD
Esquatzel Coulee Wasteway
EC-1SD to EC-3SD
300LS-6SSD
300LS-7SSD
300LS-8SSD
300LS-9SSD
300LS-10SSD
Irrigation Pump House
1100 Area
300DC-10SD TO 300DC-12SD
RM343
Port of Benton
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
300 Area (1)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations DRAFT
0 0.1 0.2
Miles

Figure 2-14 (a)

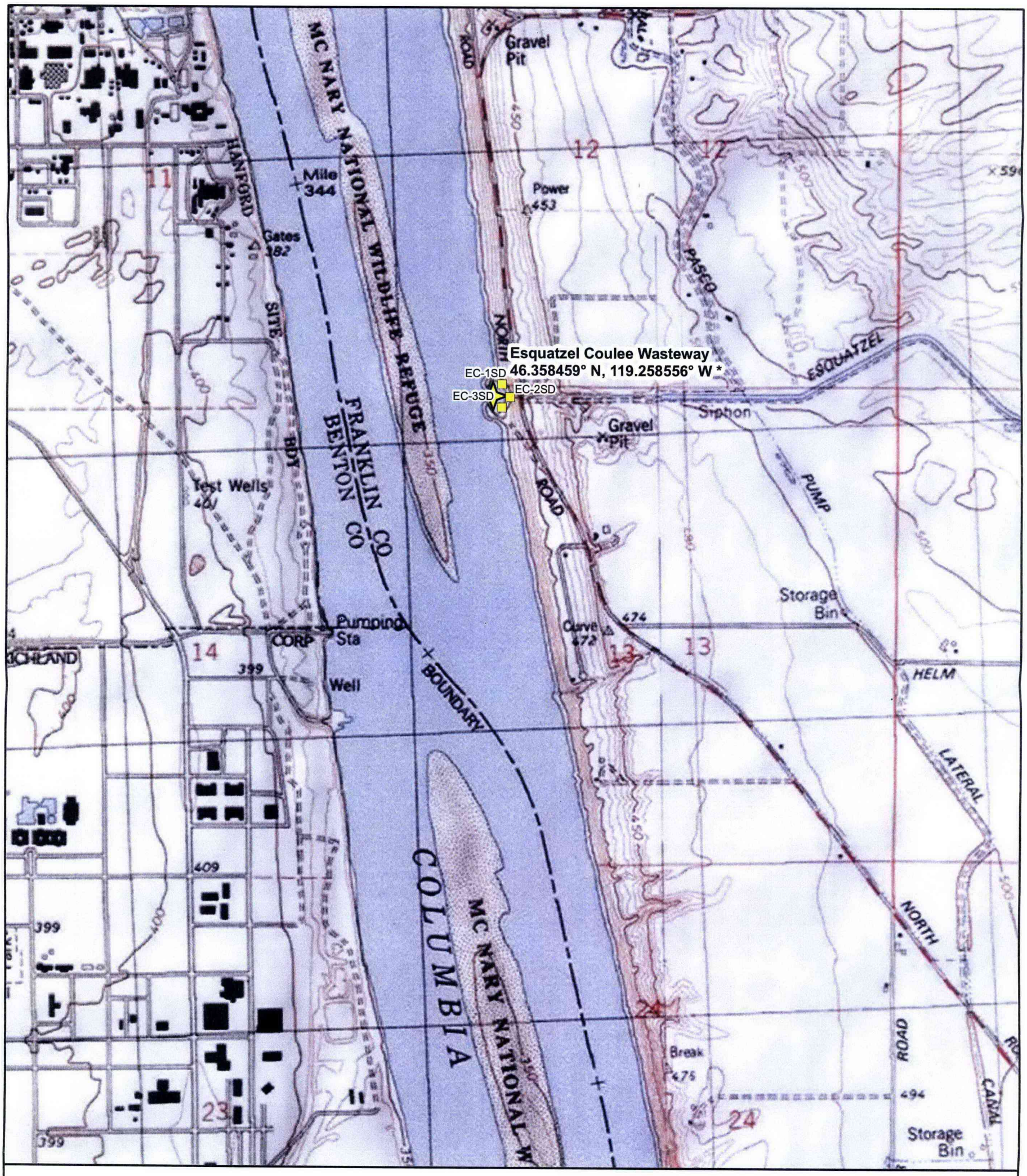


Proposed Wasteway Sampling Location

0 500 1,000 Feet

* coordinates are WGS 1984 decimal degrees

Figure 2-14 (b)



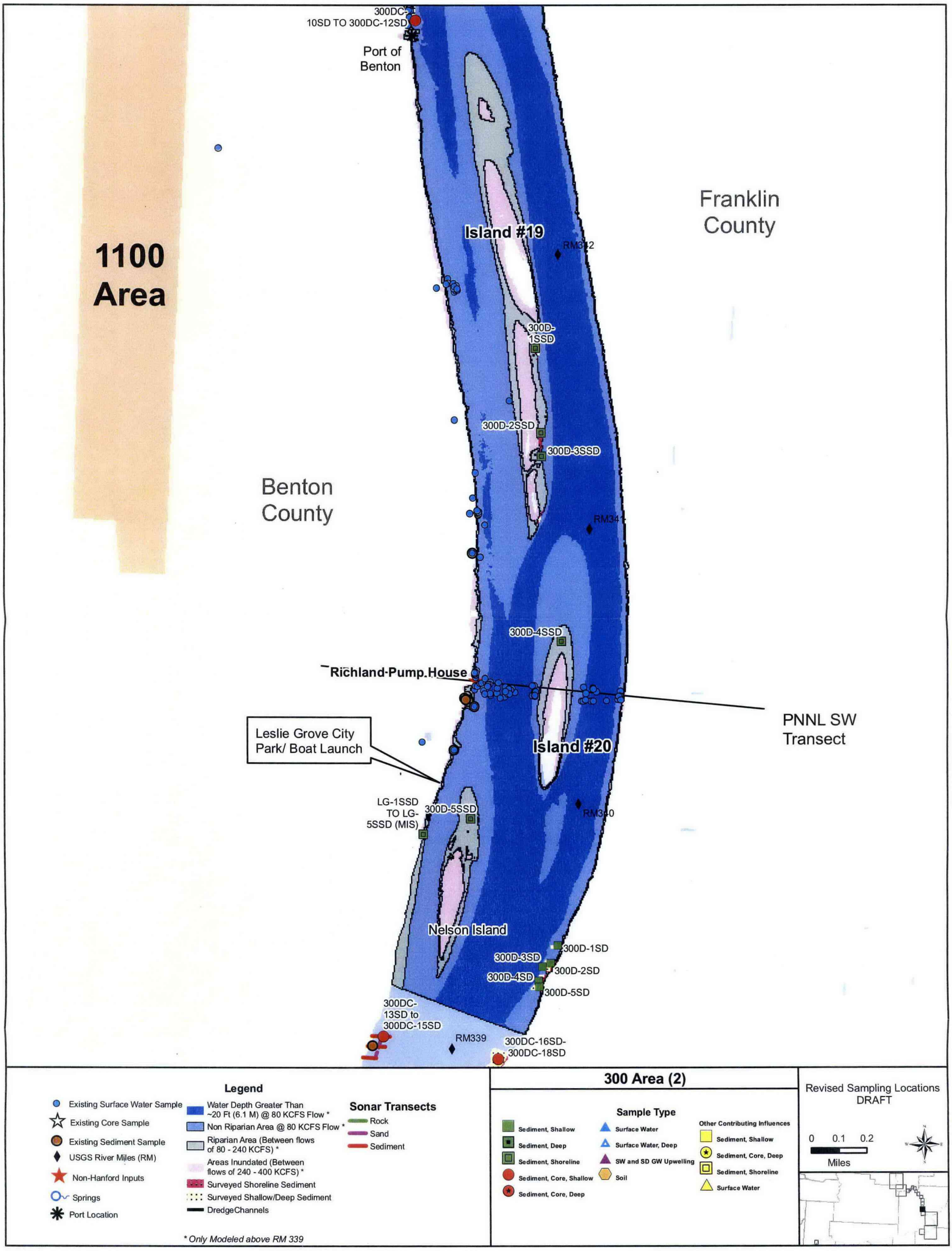
Proposed Wasteway Sampling Location

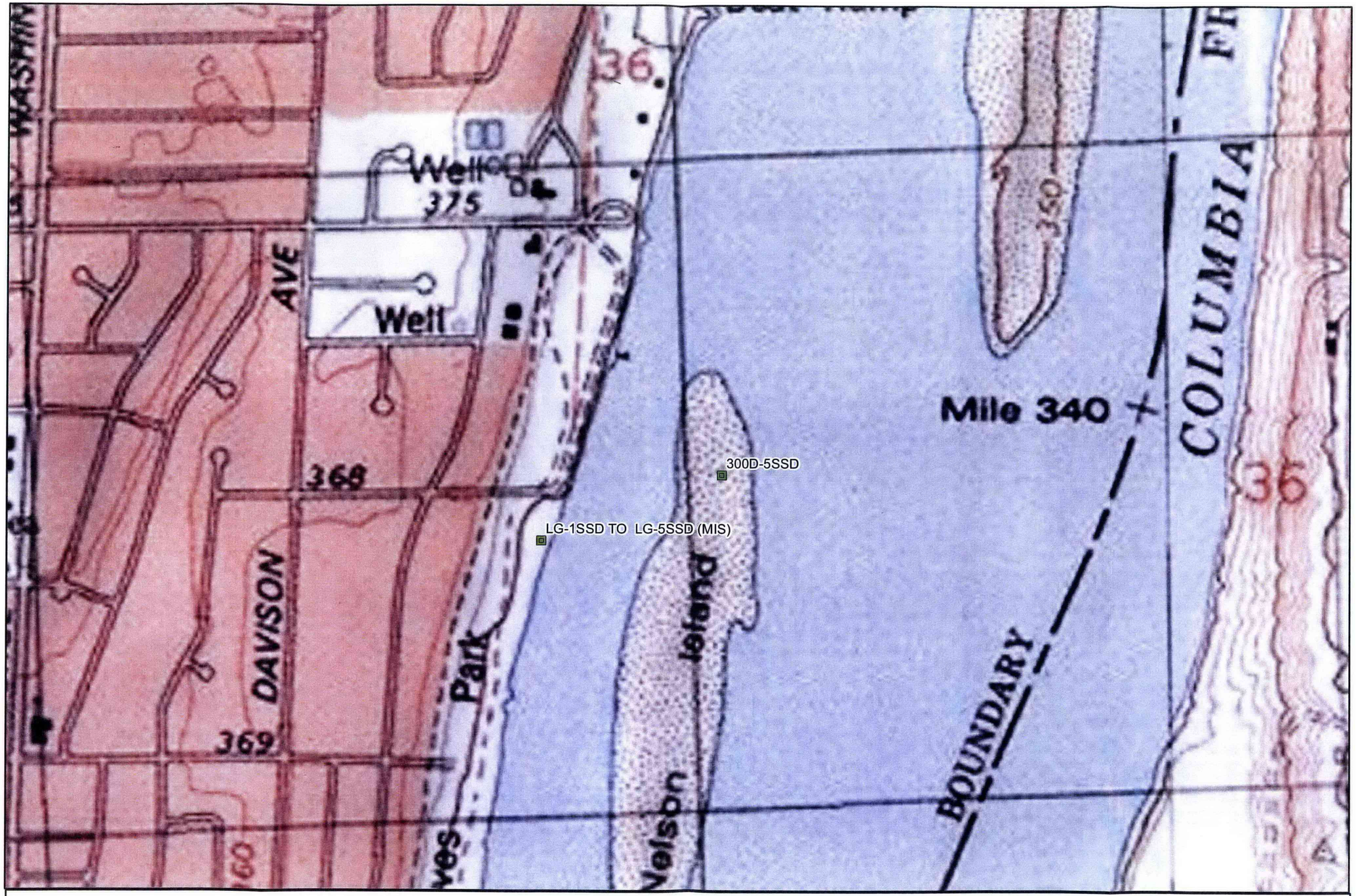
N W E S

0 500 1,000 Feet

* coordinates are WGS 1984 decimal degrees

Figure 2-15


300DC-
10SD TO 300DC-12SD
Port of
Benton
1100
Area
Franklin
County
Island #19
RM342
300D-
1SSD
300D-2SSD
300D-3SSD
Benton
County
RM341
300D-4SSD
Richland-Pump.House
PNNL SW
Transect
Leslie Grove City
Park/ Boat Launch
Island #20
LG-1SSD
TO LG-
5SSD (MIS)
300D-5SSD
RM340
Nelson Island
300D-1SD
300D-3SD
300D-2SD
300D-4SD
300D-5SD
300DC-
13SD to
300DC-15SD
RM339
300DC-16SD-
300DC-18SD
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than
~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows
of 80 - 240 KCFS) *
Areas Inundated (Between
flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
300 Area (2)
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles



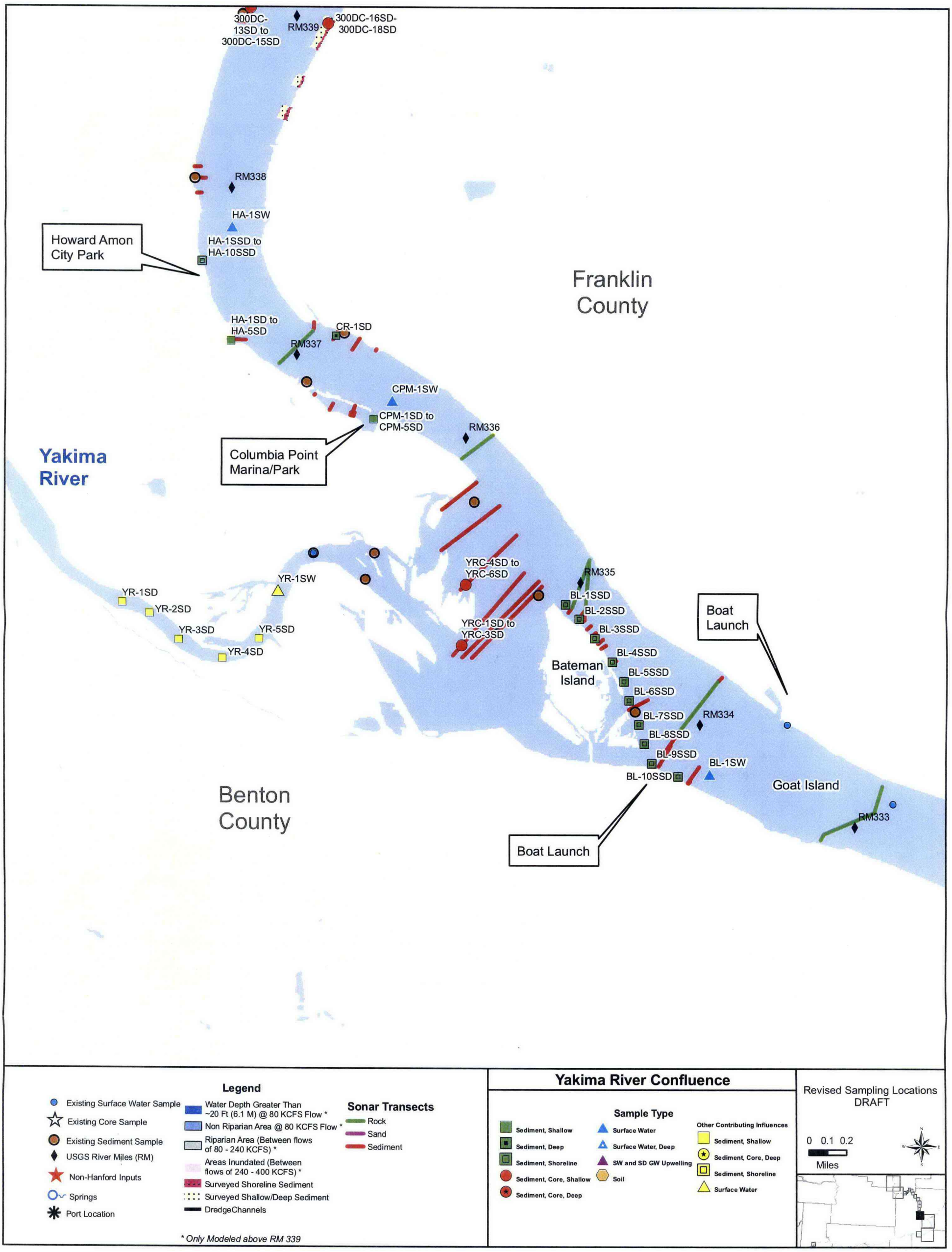
Proposed Sampling Location - Detailed View

0 0.25 0.5 1 Miles

* coordinates are WGS 1984 decimal degrees

Figure 2-15 (a)

Figure 2-16


300DC-13SD to 300DC-15SD
RM339
300DC-16SD-300DC-18SD
RM338
HA-1SW
HA-1SSD to HA-10SSD
Howard Amon City Park
Franklin County
HA-1SD to HA-5SD
CR-1SD
RM337
CPM-1SW
CPM-1SD to CPM-5SD
Columbia Point Marina/Park
RM336
Yakima River
YRC-4SD to YRC-6SD
RM335
YR-1SW
YR-1SD
YR-2SD
YR-3SD
YR-5SD
YR-4SD
YRC-1SD to YRC-3SD
BL-1SSD
BL-2SSD
BL-3SSD
BL-4SSD
BL-5SSD
BL-6SSD
BL-7SSD
BL-8SSD
BL-9SSD
BL-10SSD
Bateman Island
Boat Launch
RM334
BL-1SW
Goat Island
RM333
Benton County
Boat Launch
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Yakima River Confluence
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.1 0.2
Miles

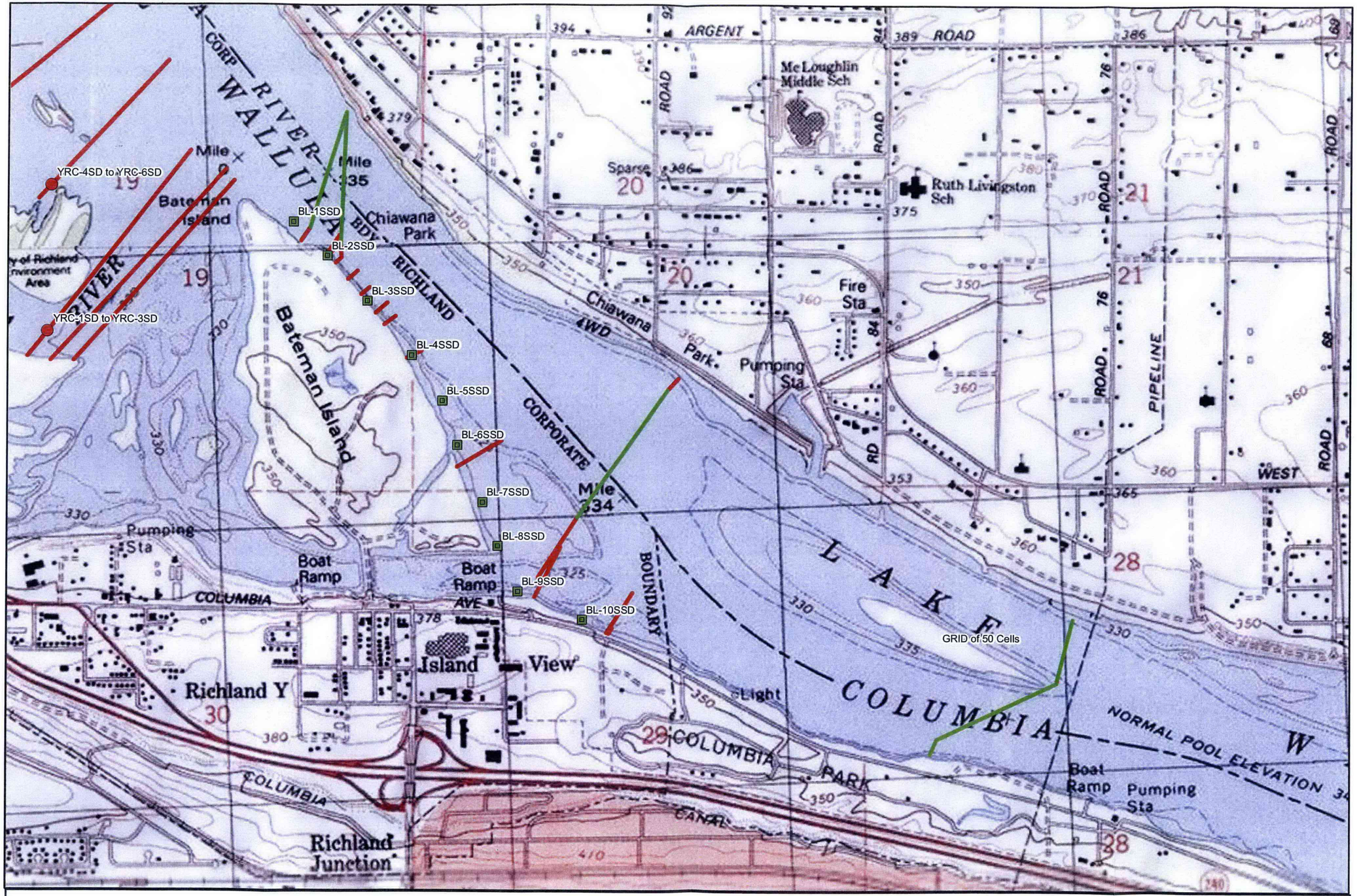
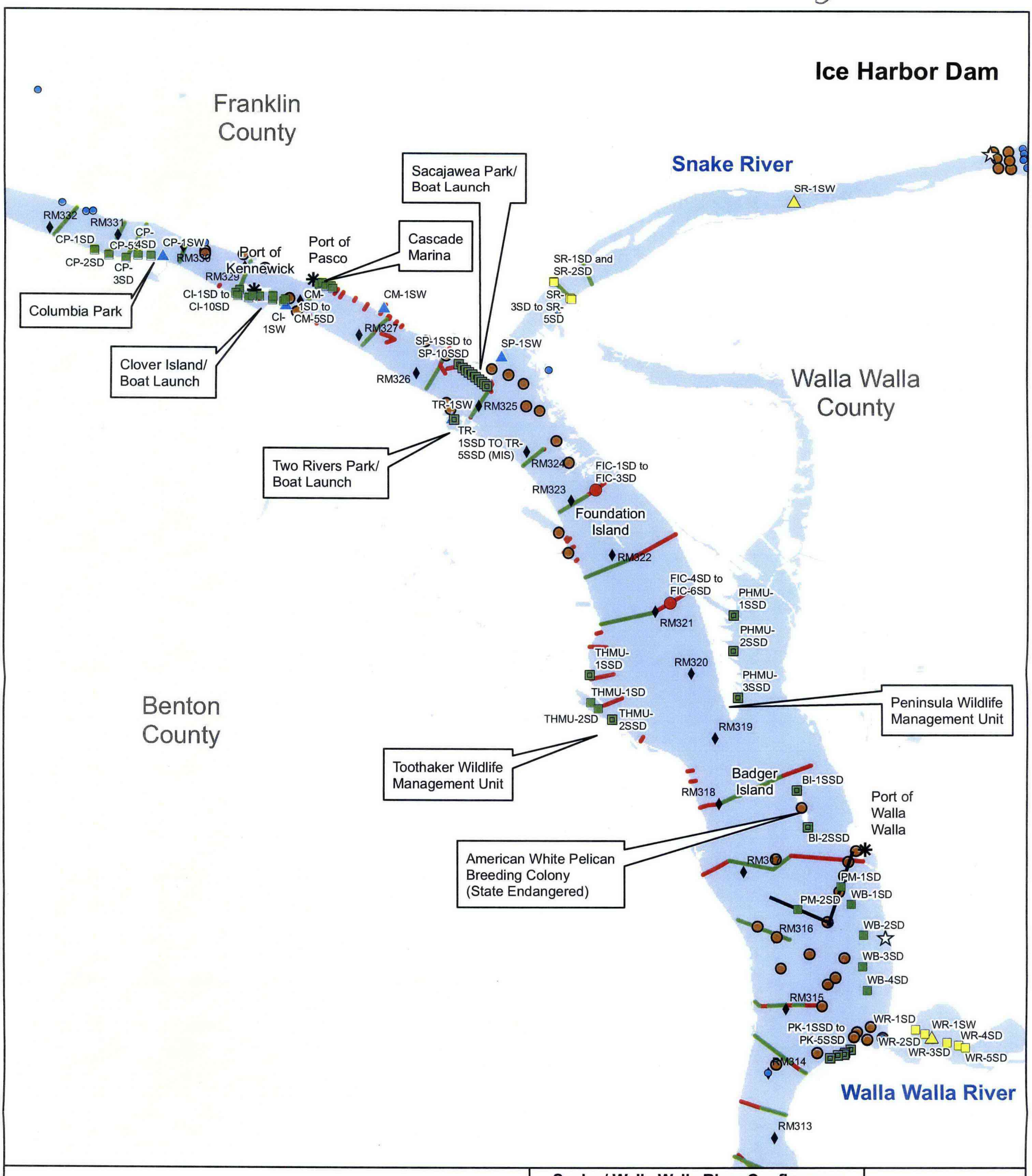

YRC-4SD to YRC-6SD
YRC-1SD to YRC-3SD
BL-1SSD
BL-2SSD
BL-3SSD
BL-4SSD
BL-5SSD
BL-6SSD
BL-7SSD
BL-8SSD
BL-9SSD
BL-10SSD
GRID of 50 Cells
Mile 0
Mile 335
Mile 334
Bateman Island
Chiawana Park
RICHLAND
CORPORATE BDY
Chiawana 4WD Park
Pumping Sta
Fire Sta
McLoughlin Middle Sch
Ruth Livingston Sch
ARGENT ROAD
ROAD 76
ROAD 84
ROAD 68
PIPELINE
WEST ROAD
RIVER
WALLULA
CORP
Boat Ramp
COLUMBIA AVE
Island View
Richland Y
COLUMBIA
Richland Junction
BOUNDARY
Light
LAKE COLUMBIA
COLUMBIA PARK
CANAL
NORMAL POOL ELEVATION
Boat Ramp
Pumping Sta
Sparse
19
20
21
28
30
Proposed Sampling Location - Detailed View
0
5,000
10,000
Feet
* coordinates are WGS 1984 decimal degrees

Figure 2-16(a)

Figure 2-17



Legend

- Existing Surface Water Sample
- Existing Core Sample
- Existing Sediment Sample
- USGS River Miles (RM)
- Non-Hanford Inputs
- Springs
- Port Location
- Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
- Non Riparian Area @ 80 KCFS Flow *
- Riparian Area (Between flows of 80 - 240 KCFS) *
- Areas Inundated (Between flows of 240 - 400 KCFS) *
- Surveyed Shoreline Sediment
- Surveyed Shallow/Deep Sediment
- DredgeChannels

Sonar Transects

- Rock
- Sand
- Sediment

** Only Modeled above RM 339*

Snake / Walla Walla River Confluences

Sample Type

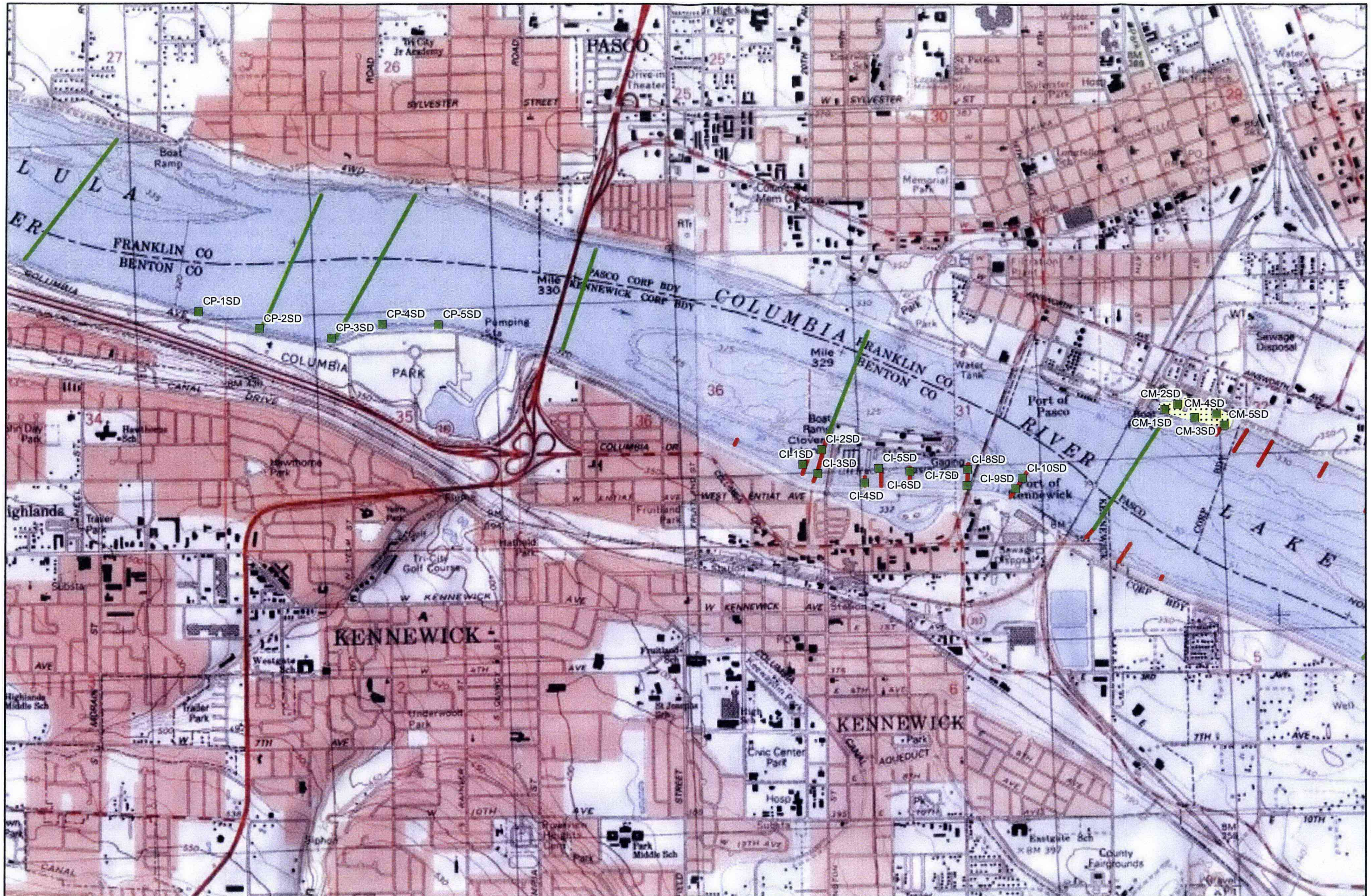
- Sediment, Shallow
- Sediment, Deep
- Sediment, Shoreline
- Sediment, Core, Shallow
- Sediment, Core, Deep
- Surface Water
- Surface Water, Deep
- SW and SD GW Upwelling
- Soil

Other Contributing Influences

- Sediment, Shallow
- Sediment, Core, Deep
- Sediment, Shoreline
- Surface Water

Revised Sampling Locations
DRAFT

0 0.5 1
Miles



Proposed Sampling Location - Detailed View

N W E S

0 0.5 1 2 Miles

* coordinates are WGS 1984 decimal degrees

Figure 2-17(a)

M-10SD

SR-1SD
SR-2SD
SR-3SD
SR-5SD
SR-4SD

SP-1SSD
SP-2SSD
SP-3SSD
SP-4SSD
SP-5SSD
SP-6SSD
SP-7SSD
SP-8SSD
SP-9SSD
SP-10SSD

TR-1SSD TO TR-5SSD (MIS)

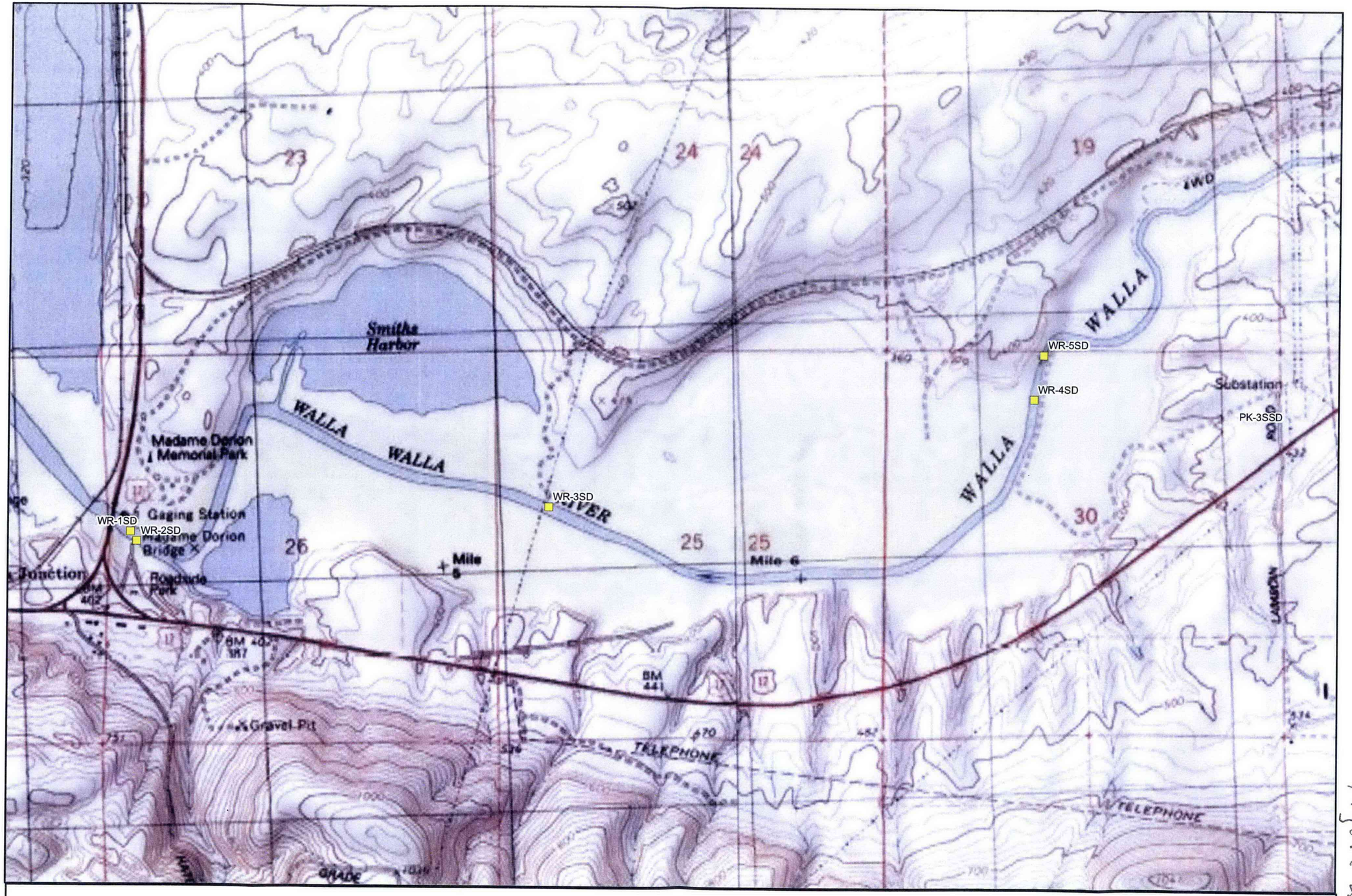
GRID of 50 Cells

Proposed Sampling Location - Detailed View

0 5,000 10,000 Feet

* coordinates are WGS 1984 decimal degrees

Figure 2-17(a)

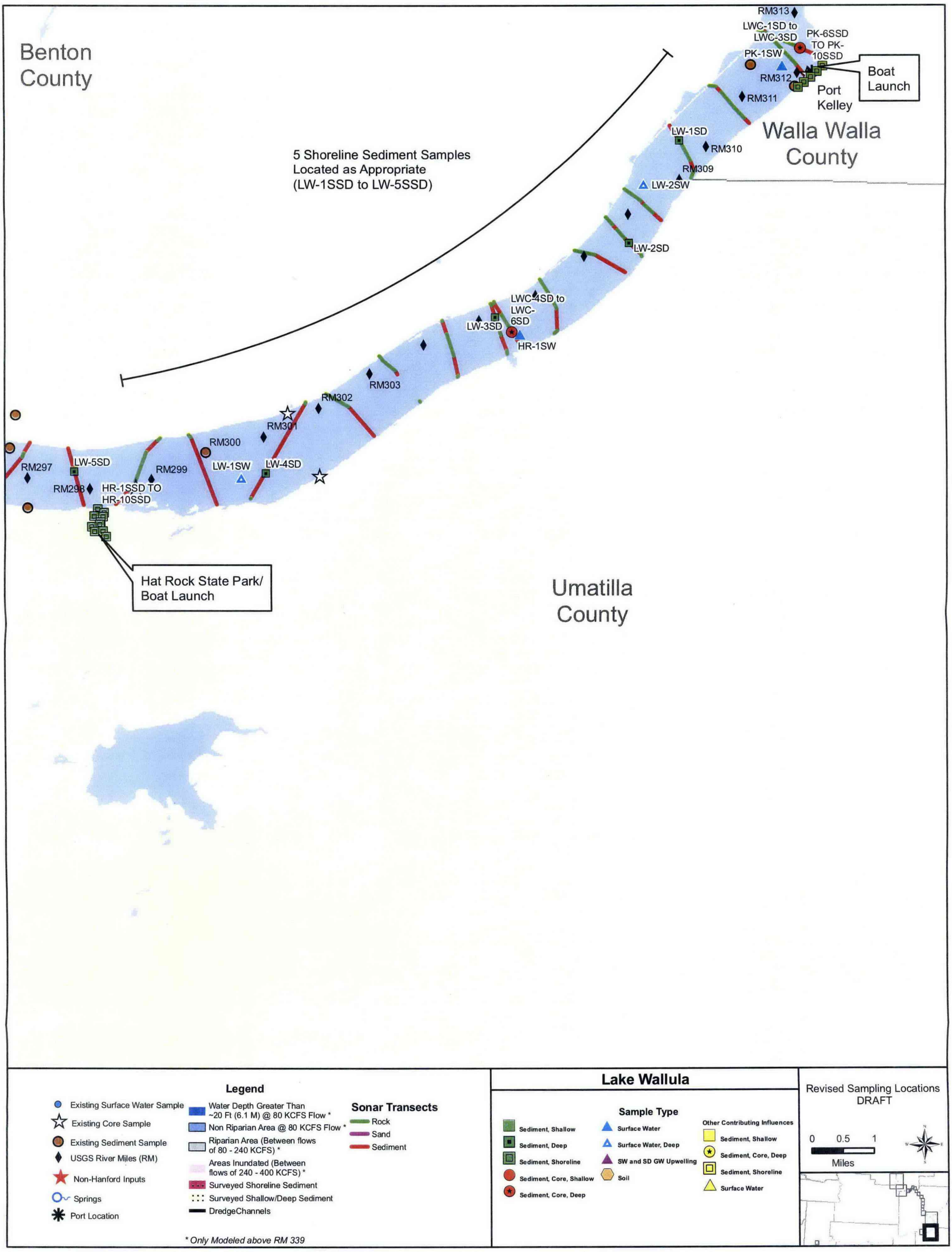


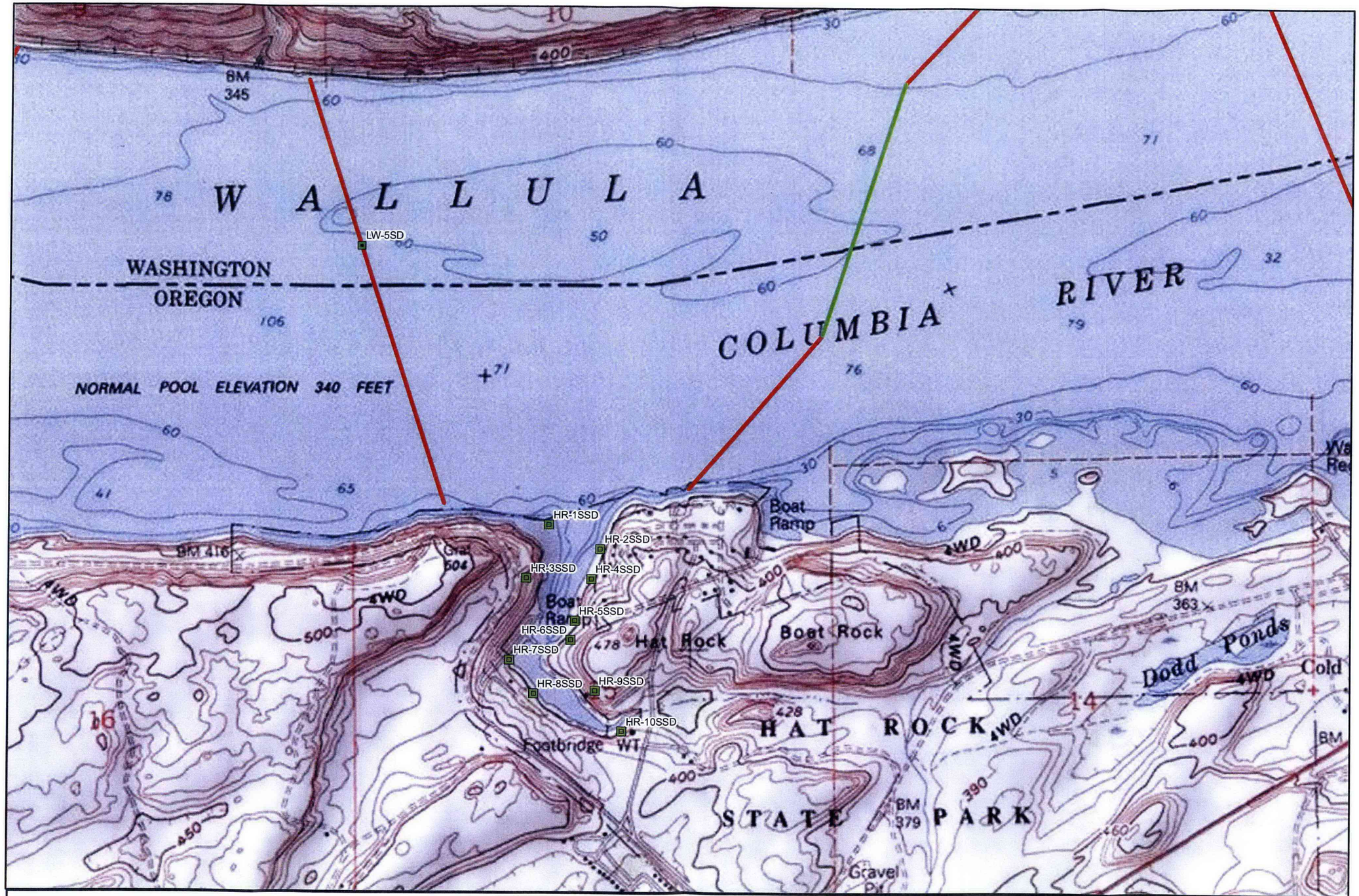
Proposed Sampling Location - Detailed View

* coordinates are WGS 1984 decimal degrees

Figure 2-17(c)

Figure 2-18


Benton County
5 Shoreline Sediment Samples Located as Appropriate (LW-1SSD to LW-5SSD)
RM313
LWC-1SD to LWC-3SD
PK-6SSD TO PK-10SSD
PK-1SW
RM312
Boat Launch
Port Kelley
RM311
Walla Walla County
LW-1SD
RM310
RM309
LW-2SW
LW-2SD
LWC-4SD to LWC-6SD
LW-3SD
HR-1SW
RM303
RM302
RM301
RM300
LW-1SW
LW-4SD
RM297
LW-5SD
RM299
RM298
HR-1SSD TO HR-10SSD
Hat Rock State Park/ Boat Launch
Umatilla County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Lake Wallula
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.5 1
Miles

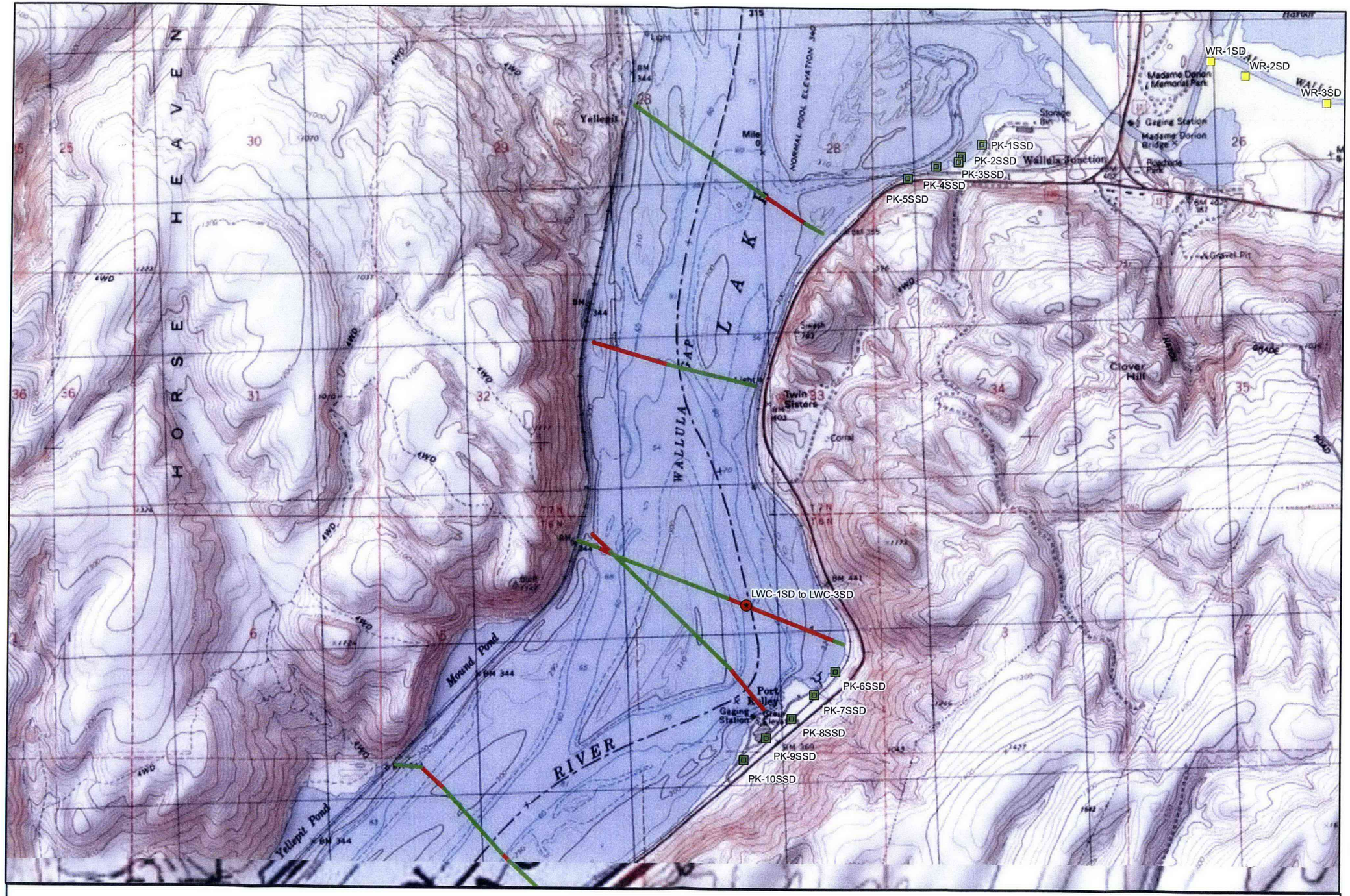


Proposed Sampling Location - Detailed View

0 0.25 0.5 1 Miles

* coordinates are WGS 1984 decimal degrees

Figure 2-18(a)



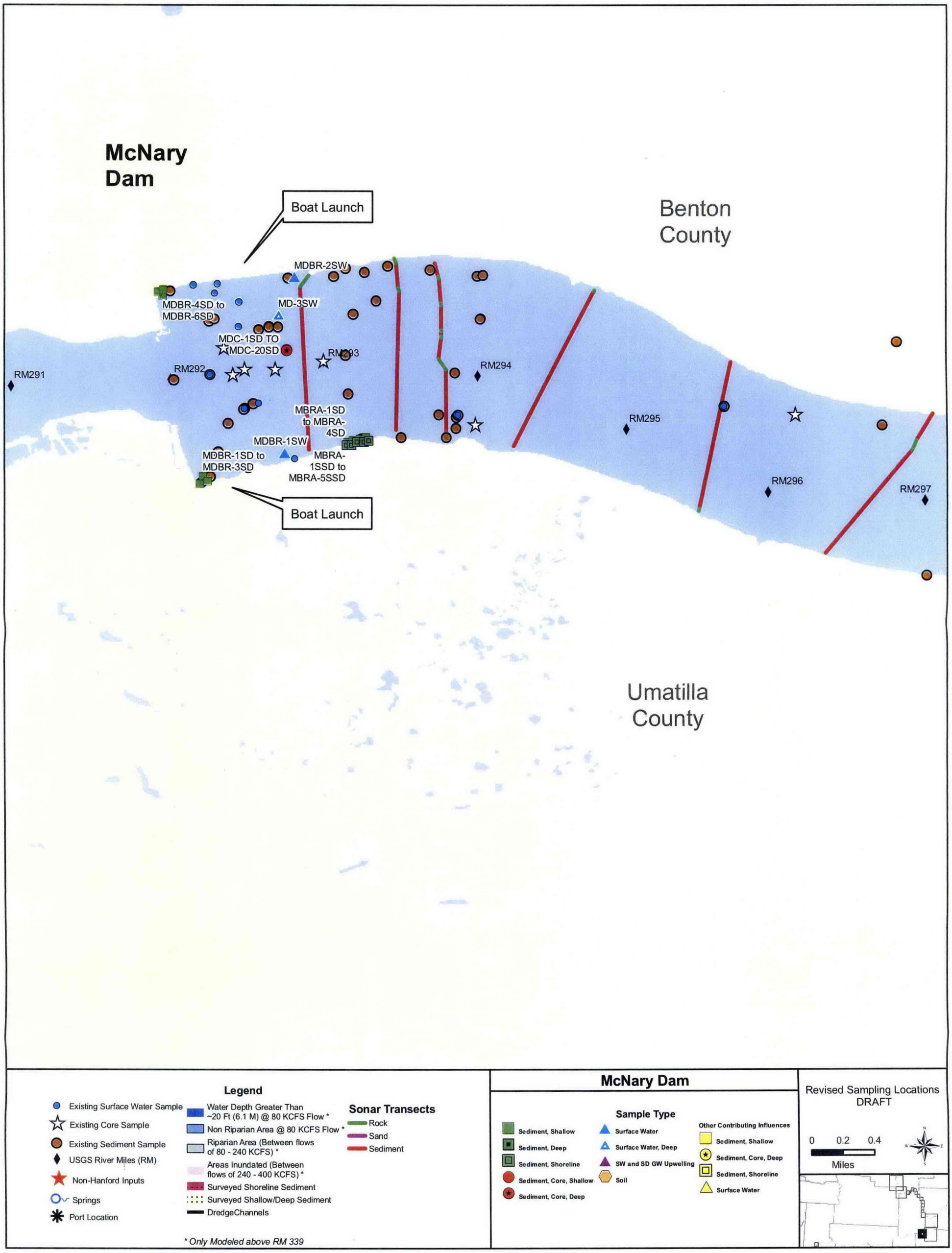
Proposed Sampling Location - Detailed View

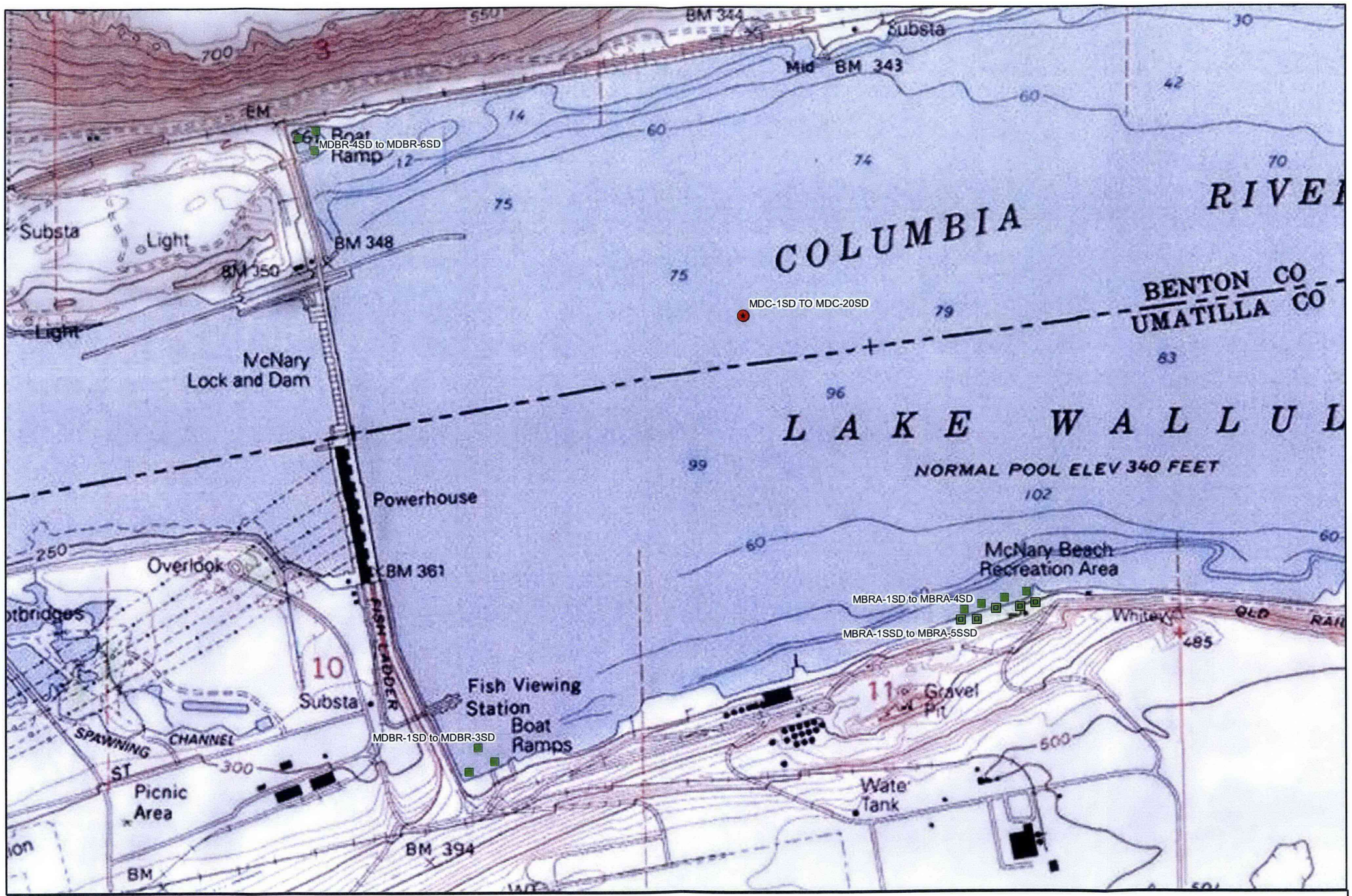
0 0.5 1 2 Miles

* coordinates are WGS 1984 decimal degrees

Figure 2.18(b)

Figure 2-19


McNary Dam
Boat Launch
Benton County
MDBR-2SW
MDBR-4SD to MDBR-6SD
MD-3SW
MDC-1SD TO MDC-20SD
RM293
RM291
RM292
RM294
MBRA-1SD to MBRA-4SD
MDBR-1SW
MDBR-1SD to MDBR-3SD
MBRA-1SSD to MBRA-5SSD
RM295
RM296
RM297
Boat Launch
Umatilla County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
McNary Dam
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations
DRAFT
0 0.2 0.4
Miles

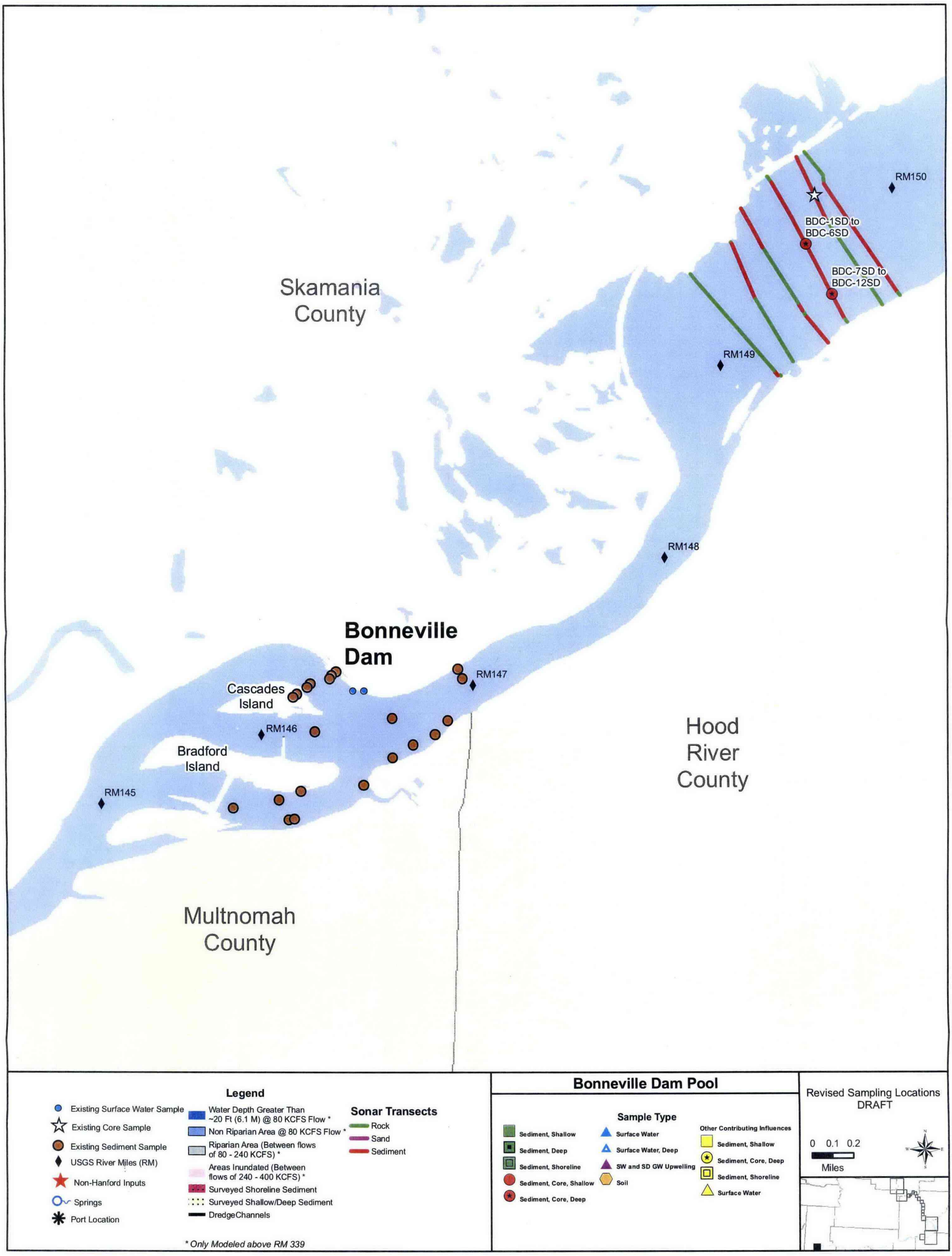


Proposed Sampling Location - Detailed View

* coordinates are WGS 1984 decimal degrees

Figure 2-16(a)

Figure 2-20


Skamania County
RM150
BDC-1SD to BDC-6SD
BDC-7SD to BDC-12SD
RM149
RM148
Bonneville Dam
RM147
Cascades Island
RM146
Bradford Island
RM145
Hood River County
Multnomah County
Legend
Existing Surface Water Sample
Existing Core Sample
Existing Sediment Sample
USGS River Miles (RM)
Non-Hanford Inputs
Springs
Port Location
Water Depth Greater Than ~20 Ft (6.1 M) @ 80 KCFS Flow *
Non Riparian Area @ 80 KCFS Flow *
Riparian Area (Between flows of 80 - 240 KCFS) *
Areas Inundated (Between flows of 240 - 400 KCFS) *
Surveyed Shoreline Sediment
Surveyed Shallow/Deep Sediment
DredgeChannels
Sonar Transects
Rock
Sand
Sediment
* Only Modeled above RM 339
Bonneville Dam Pool
Sample Type
Sediment, Shallow
Sediment, Deep
Sediment, Shoreline
Sediment, Core, Shallow
Sediment, Core, Deep
Surface Water
Surface Water, Deep
SW and SD GW Upwelling
Soil
Other Contributing Influences
Sediment, Shallow
Sediment, Core, Deep
Sediment, Shoreline
Surface Water
Revised Sampling Locations DRAFT
0 0.1 0.2
Miles